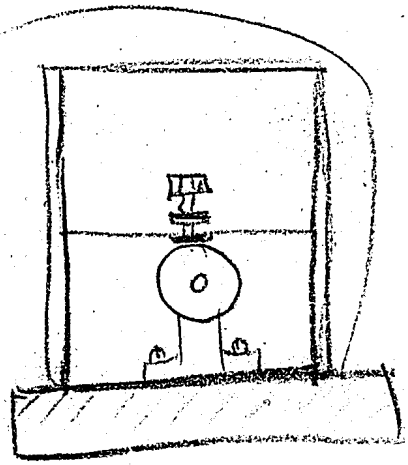
Notebook, Volume 18

This volume covers the period June-December 1878, with one additional entry for November, 1876 and a few for 1879. The notes and drawings are by Edison, Charles Batchelor, Charles P. Edison, and John Kruesi, and they relate entirely to the telephone. Many were witnessed by members of the laboratory staff and notarized by Stockton L. Griffin. The volume consists of 123 numbered, unbound leaves.



Nov 1st 1871

To Edison

Chas Batchelor

M. M. Ford

J. Kruesi

3 5
12
18) 4 2 0 2 0
3 2
1 0 0

1

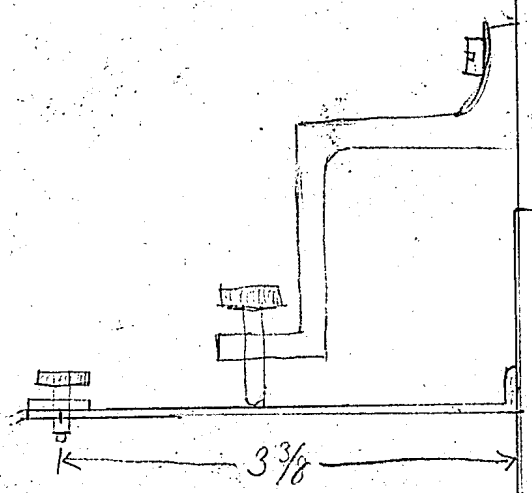
2

Electro-Metograph Receiving for Telegraphy
June 19th 1878
J Rowe

Witness
Chas Batchelor
Martin
G E Carrier

Personally appeared before me this
18 , the
Chas. Batchelor, John
and acknowledged the above to be

Notary Public.



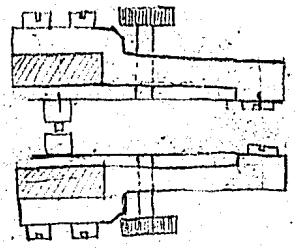
Copied on p 75 Vol 4
Ent Records Oct 8-1928
McCauley

2

1

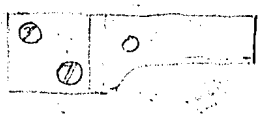
New Receiver for Telephone
July 8th 1878

J Kruesi
T A Edison
Chas Batchelor
Martin Force
W E Carman



Personally appeared before me this
18 , the
Chas. Batchelor, John Kruesi,
and acknowledged the above to be

Notary Public.



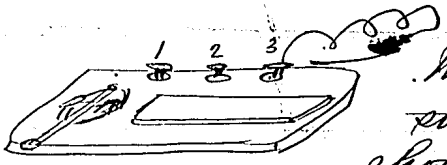
Armature must be as long as the Diameter of the spool.

Copied on page 75 Vol 4
Exp Researches Oct 8. 1878
W E Carman

T. A. EDISON,

Menlo Park, N. J., July 4 1878

Mr Kruesi



Make an instrument to show the moto-graph principle with key at left hand and the two binding posts behind key. to the right of key put a piece of brass about 1¼ inch wide and 4 or 5 inch long; ~~with~~ flexible cord attached to post 3 & has a platina faced strip on other end

Chas Batchelor

Finished J Kruesi

1+2

3

4

T. A. EDISON,

Menlo Park, N. J., July 27 1878

1

John Kruesi

Make new magnets for Partrick and Carter telephones & rings for diaph. put in Carbon & adjust for talking.

Chas Batchelor

Three compound magnets of F. Hobsons extra best steel 2 of 3/4 by 1/4 steel side by side & 1 of 1/2 in □ steel all of 3 three pieces.

22 made single of F. Hobsons choice 1 1/2 x 1/2

For all of them are iron plates made to screw magnet on back of bracket instead of bottom, for 14 are brass plates made to screw transmitters on from outside without taking the hole machine apart. Finished August 8th 1878

J Kruesi

5

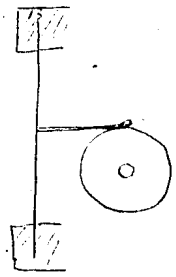
Chas. Reversber

Menlo Park Oct 11 1878

Chas F Chase
Ta Edman
Chas Batchelor
J Krusi Jr
Martin
G B Barnard

Personally appeared before me this day of
18 , the above named
Chas. Batchelor, Chas. Edman, and
and acknowledged the above to be their

Notary Public.



finely powdered chalk

" " " mixed with Dextrine

" " " " " Lamp Black

" " " " " Black lead

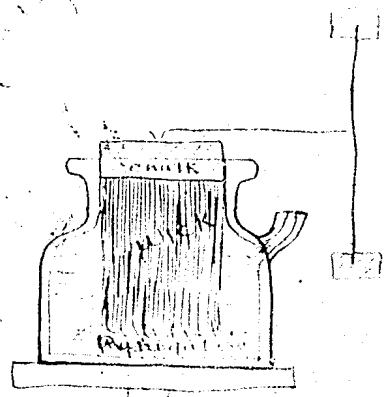
Sulphate of Cu.

Olive Oil & Pyrogalic " " Olive oil

Nitrate Uranium dissolved in Glycerine

" " " " " " " "

chalk and graphite
grade to chalk
which adhere
up to the
in the
keeping



Looked on page 77. Earl Roscoe
Oct 8. 1878. W Carman

6

Sept 17th/8 Electro Chemical Experiments for New Accumulator

Caustic Potash
2 Hypersulphite Ammonia
Nitrate Lime
+ Hyposulphite Soda
+ Castor Oil
Sulphovinate Soda
Chloral Hydrate
+ Oil Cinnamon
Nitrate Strontia
+ Tannic
+ Oil Wintergreen
Nitrate of Silver —+
Ether
0 Nitrate of Lime

Chas. Batchelor
J. A. E. Duncan
Chas Batchelor
J. Krucci
J. Martin Force
G. E. Carman

Personally appeared before me this day of 18 , Chas. Batchelor, John Krucci, and acknowledged the above to be their signature.

Notary Public.

Copied on page 76. Vol 4. Exp Record
Dec 8. 1879 G E Carman

7

9

Experiments

Chemical Mfg. Acid Engineers

Dept. 11/1878

Chas. Datcheler

Acetate Manganese & Chloride Potash

Acetate Manganese

Chloride Potash

Iodide Iod — Iodide of Soda

Nitrate Uranium

Oxalate Cerium on Hydrofluoric Acid

Cupric Chloride

Sulphate Zinc — Silver H.

Sulphate

Acetate Manganese

" Cobalt

Nitrate Magnesia

Iodide Cadmium — Nitrate Zinc

Sulphate — Copper

Formate Soda — Iod

Aqueous acid

Licorice

Carbonate Ammonia

Caustic Soda — Iod

Tartaric Acid

Bicarbonate Carbon

Turpentine

Acid Acetic Acid

Acetate Nickel

Hydrochloric Acid — Iod

T. A. Edison

J. Krueger Jr.

Wilhelm Jr.

G. E. Omaire

Personally appeared before me this day of 18 , the said Chas. A. Edison, Chas. Datcheler, John Krueger, and Martin Jones, and acknowledged the above to be their act and deed.

Notary Public.

Looked on page 80 Doc & Exh
Rescurched Oct 8, 1878
O. Parm

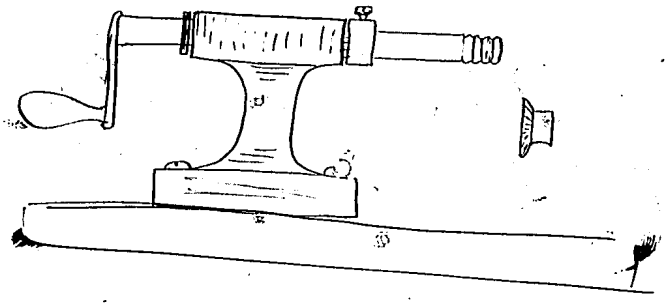
8

T. A. EDISON.

24

Menlo Park, N. J., _____ 187

Fig 3



Speaking-Telephone

G. E. Gammon
Chas. Batchelor
Ernest Johnson
Wm. H. Force

Sept. 19th 1878

Chas. A. Edison
Wm. Carman
Stockton L. Griffin

Copied on page 19. Vol 4
Eck Roomer Co of Q. 1878
O. Clemmer

6

Chas. F. Edison
G. Carman

Telephone Receiver
Sept. 22nd 1878

Chloride Calcium N.G. Wont mind
Carbonate Potash " " " "
Chalk saturated with a solution of Caustic Soda, Pyro glycerine - and Acetate mercury — Good

Chalk and Caustic Soda - Good at first but dry -

Salt Peter and Acetate Mercury. Irregular - keeps dry -

Chalk - saturated with Solution of Caustic Soda Pyro - glycerine - and Acetate mercury - Good after standing - very good - and come even. any good after turning off.

Caustic Soda - good - N.G. -
Sulphate Soda and Salt petre - very low N.G.

Chas Batchelor
John Kruesi
Martin Force

Copied on page 78. Vol 1. Exp Recorders
Sept. 18 1878 G. Carman

Personally appeared before me this day of
18 , the subscribers
Chas. Batchelor, John Kruesi,
and acknowledged the above
Notary Public.

10

7

Telephone Receiver

Sept 28th 1878

T A Edison

Chas. A. Edison

Geo Carman

Cork saturated with Ammonia — N.G.

Cork Saturated with Caustic Soda, Glycerine, Acetate mercury Pyrogallic acid N.G.

Telephone Receiver

Chas A Edison

Sept 24th 1878

Chas Batchelor

Thomas

Martin Foreman

Chlorate Potash — wont fuse —

Bromide Potassium N.G. wont fuse —

Sulphate Magnesia N.G. "

Ferro Cyan Potash — N.G. "

Sulphate Soda to Delequesant

Chloride Zinc N.G. wont fuse

Sulphate Baryta powdered and mixed with a solution of Acetate Mercury, pyro, Glycerine and Caustic Soda, works very good but is rather to soft —

Personally appeared before me this 13 day of [illegible] Chas. Batchelor, [illegible] and acknowledged the above to [illegible]

Notary [illegible]

Copied on Page 17 Vol 4 Extra Descriptive Book

[illegible]

11

19

Speaking Telephone Receiver

Oct 7 1878

Chas Batchelor

John Ricc

J Kruesi

Martin Force

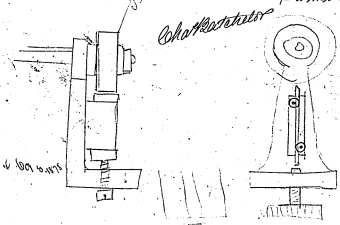
G E Carman

Chas Batchelor

Sale

for Cutting up Rice

Sale



Copied on page 85 of Ex Rec No 1878

T. A. EDISON.

Menlo Park, N. J.,

Sept 26th 1878

Speaking Telephone Receiver

Sale

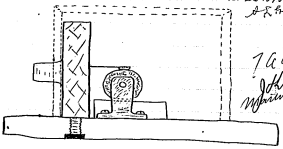
G E Carman

T A Edison

Witnesses

Sept 26 1878

A R Griffin



T A Edison

J Kruesi

Martin Force

Personally appeared before me this

19 , the said Chas. B.

Chas. Batchelor, John Kruesi, and Martin

and acknowledged the above to be their

Notary Public.

Copied on page 79 of Ex Rec No 1878

Oct 9. 1878

13

12

14

T. A. EDISON.

Telephone

Menlo Park, N. J., 187

Oct 2 1878

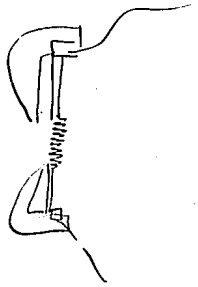
T A Edison

J Kruesi

M Force

G E Carman

Chas Batchelor



air draft cools platina & alters the resistance,

[illegible] 10 [illegible] to

Notary Public

Copied on p 85 Vol 4 Expt Recorders Dec 5, 1878 [illegible]

22

14

Speaking Telephone Receiver

Oct 3rd 1878

T A E

Chas P. Edison

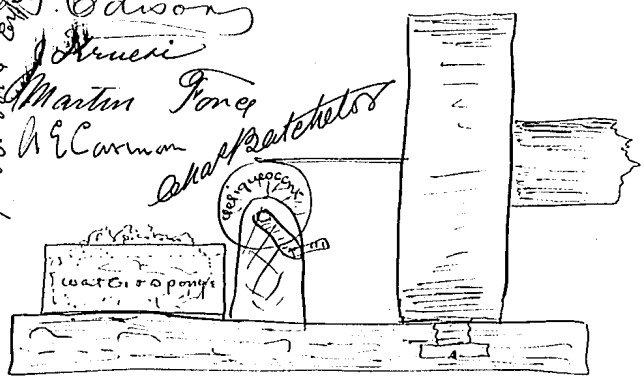
J Kruesi

Martin Force

A E Carman

Chas Batchelor

Copied for page 83 Vol 4 Expt Recorders Nov 8, 78



The above enclosed in case to prevent evaporation

deliquescent

Personally appeared before me this 10 [illegible] Chas. Batchelor, John Kruesi [illegible] and acknowledged the above [illegible]

Notary Public

Menlo Park, N. J., 187

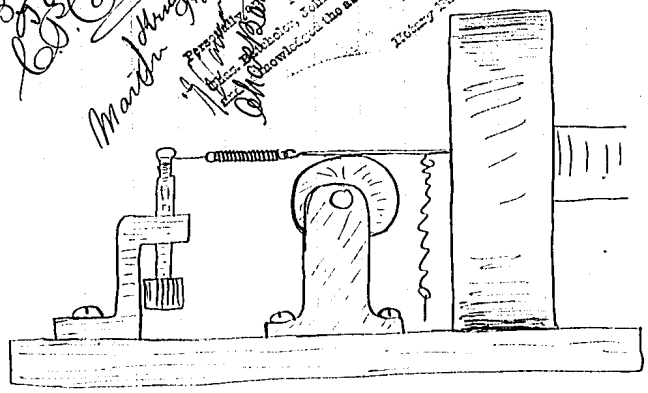
T. A. EDISON.

14

15

T. A. EDISON.

Menlo Park, N. J., _____ 187



Geo. Young Jr. Recorder
Oct 3rd 1878
C. P. Edison
Martin Hruesi
Witness
Chas. Batchelor

Personally appeared before me this
13 , the said Thos. A. Edison, John Ericsson, and Martin Hruesi,
severally acknowledged the above to be their free act and deed.

Notary Public.

Boog Young

Copied on page 82 Vol 4 Exp Researches Oct 8. 1878

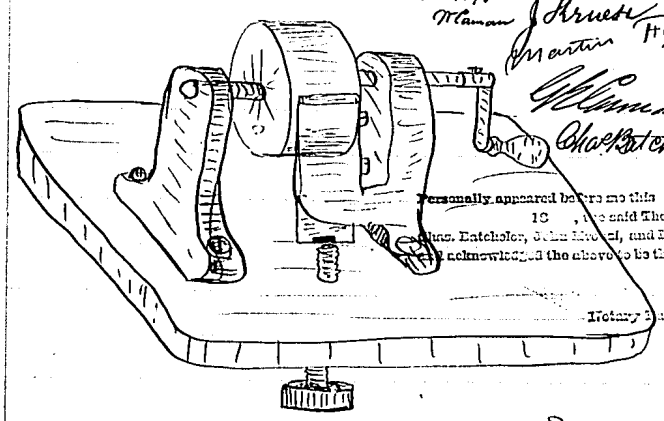
16

Attachment for Lining Discs

Oct 3rd 1878

Copied on page 81. Vol 4. E. R. Oct 8. 1878

C. P. Edison
Martin Hruesi
Witness
Chas. Batchelor



Personally appeared before me this
13 , the said Thos. A. Edison, John Ericsson, and Martin Hruesi,
severally acknowledged the above to be their free act and deed.

Notary Public.

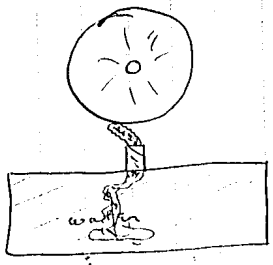
Oct 3rd 1878

T. A. EDISON.

Menlo Park, N. J., _____ 187

C. P. Edison

17



Speaking Telephone Drawing

Oct 4th 1878

Chas Batchelor

Chas Batchelor

Copied on page 82 Vol 4
Exp Research Oct 8. 1878
W Carman

T. A. EDISON.

Menlo Park, N. J., _____ 187

Personally appeared before me this _____ day of _____ 18__, the said Thos. A. Edison, Chas. Batchelor, John Krouse, and Martin Force and acknowledged the above to be their _____

Notary Public.

19

10

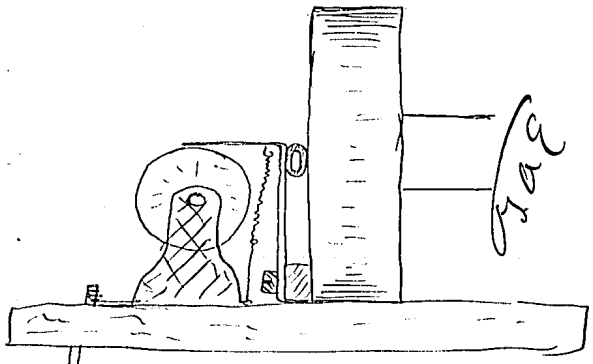


Fig 2

Speaking Telephone Drawing

Menlo Park Oct 3rd 1878

Chas Batchelor

Copied on page 8 Vol 4
Exp Research Oct 8 1878
W Carman

T. A. EDISON.

Menlo Park, N. J., _____ 187

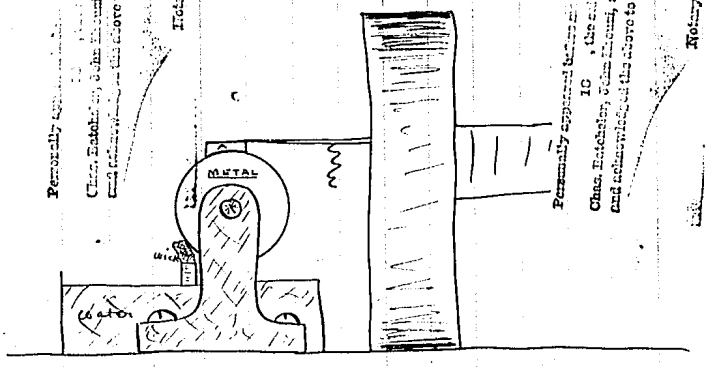
Personally appeared before me this _____ day of _____ 18__, the said Thos. A. Edison, Chas. Batchelor, John Krouse, and Martin Force and acknowledged the above to be their _____

Notary Public.

18

T. A. EDISON.

Menlo Park, N. J.



A – point made of Carotic chalk or other substance

Speaking Telephone Receiver

Oct 4th 1878

Chas. A. Edison

Martin Force

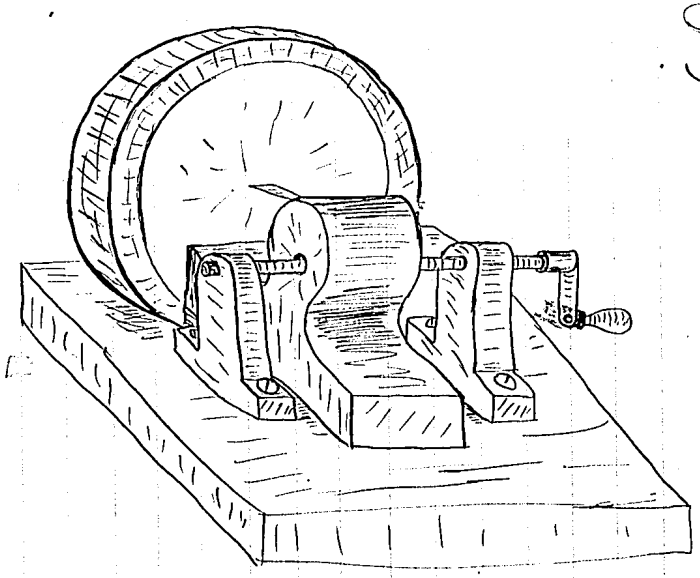
C. P. Edison

Notary Public

Copied on page 83. Vol 4 Exp Researches Oct 8 1878

T. A. Edison

Chas. A. Edison



Speaking Telephone Receiver

Oct 4th 1878

Chas. A. Edison

Martin Force

T. A. Edison

Notary Public.

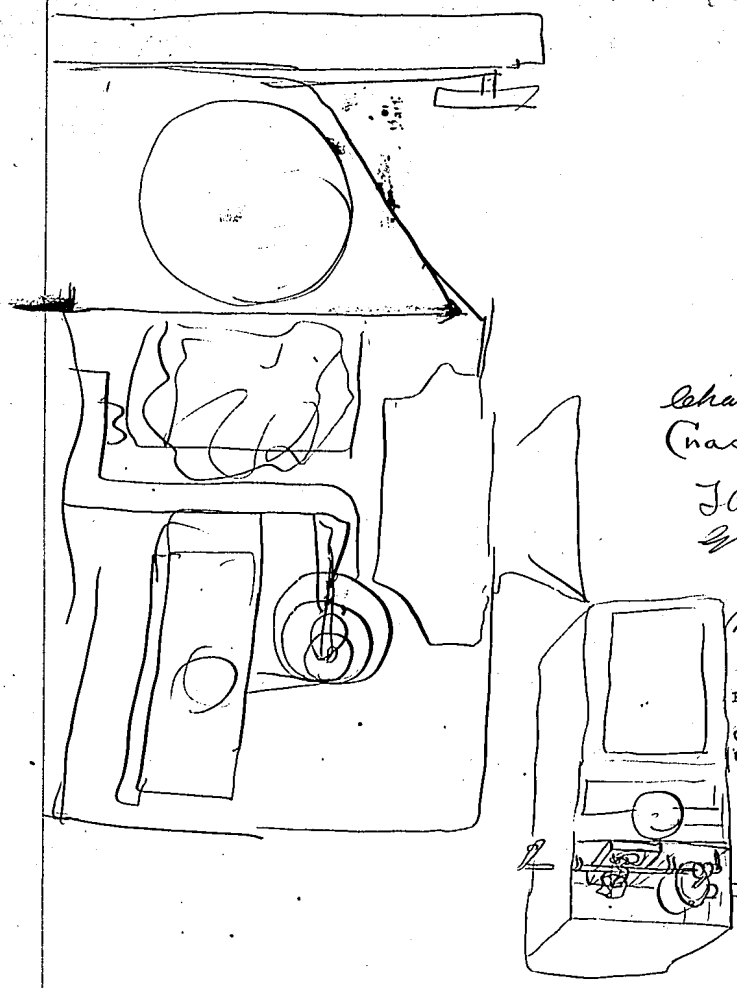
Copied on P. 84 Vol 4 Exp Researches Oct 8. 1878

T. A. EDISON.

Menlo Park, N. J.

187

Oct 7. 1878



Stockton L. Griffin
Chas. Batchelor
Chas. S. Edison
T A Edison
G E Gaman
J Kruesi
Martin Force
Chas. Batchelor

Personally appeared before me this 10 , the subscribers, Chas. Batchelor, John Kruesi, and Martin Force, and acknowledged the above to be their signatures

Notary Public

Copied on page 86 Bo 4. Ent
Recorded Oct 8. 1878
W Caman

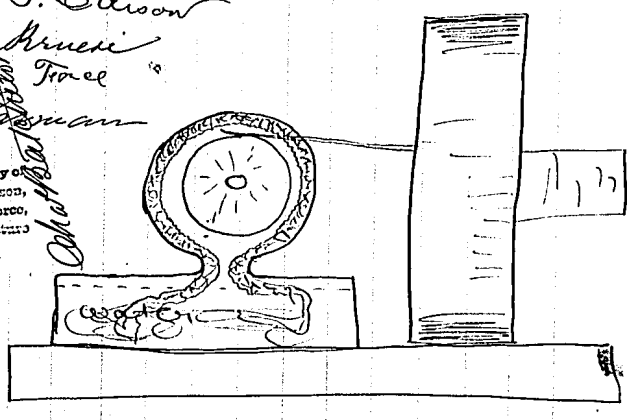
23

Speaking Telephone Receiver
Oct 4th 1878

C. S. Edison
J Kruesi
Martin Force
G E Gaman
T A Edison
Chas. Batchelor

Personally appeared before me this 10 day of , the subscribers, Chas. A. Edison, Chas. Batchelor, John Kruesi, and Martin Force, and acknowledged the above to be their signatures

Notary Public.



T. A. EDISON.

Menlo Park, N. J., 187

Copied on Page 84 Bo 4
Ent Re Oct 8. 1878
W Caman

22

43

New Receiver

Oct 7th 1878

Stockton & Griffin

Thos. A. Edison

Chas Batchelor

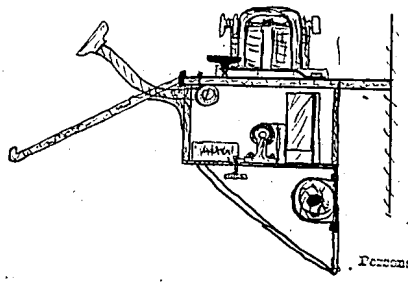
Ja Edison

W E Gilmore

J. Krueski

M M Foner

Chas Batchelor



Personally appeared before me this
18
Chas. Batchelor, [illegible]
and acknowledged the above to be [illegible]

Notary Public.

Copied on P 56. Vol 4 Earth Researches
Oct 5. 1878 W Carman

24

Oct 7th 1878

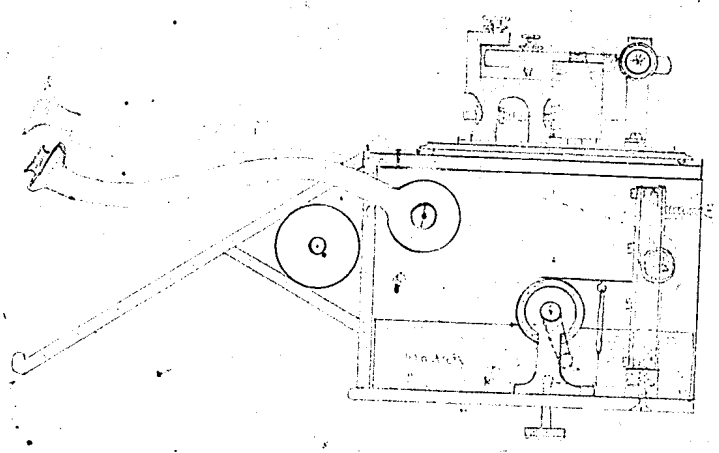


Fig 3

Telephone Receiver

Chas. S. Edison

~~Chas Batchelor~~

M. M. Force

Geo E Carman

Chas B. J. Kruesi

Copied on pages 3 & 4 of 4 Exp Records
Oct 8, 1878
Geo Carman

F

Oct 7th 1878

New Feaver

Thos A Edison

Chas Batchelor

Stockton L Griffin

J A Edison

J E Cameron

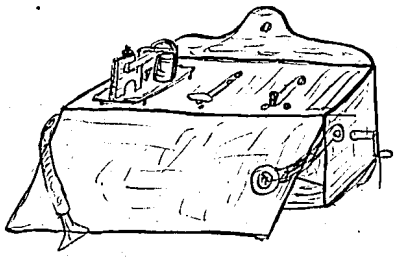
J Kenesi

Warren Foster

Chas Batchelor

Personally appeared before me this
10 , the within named
Chas. Batchelor, John Kenesi, and
and acknowledged the above to be their

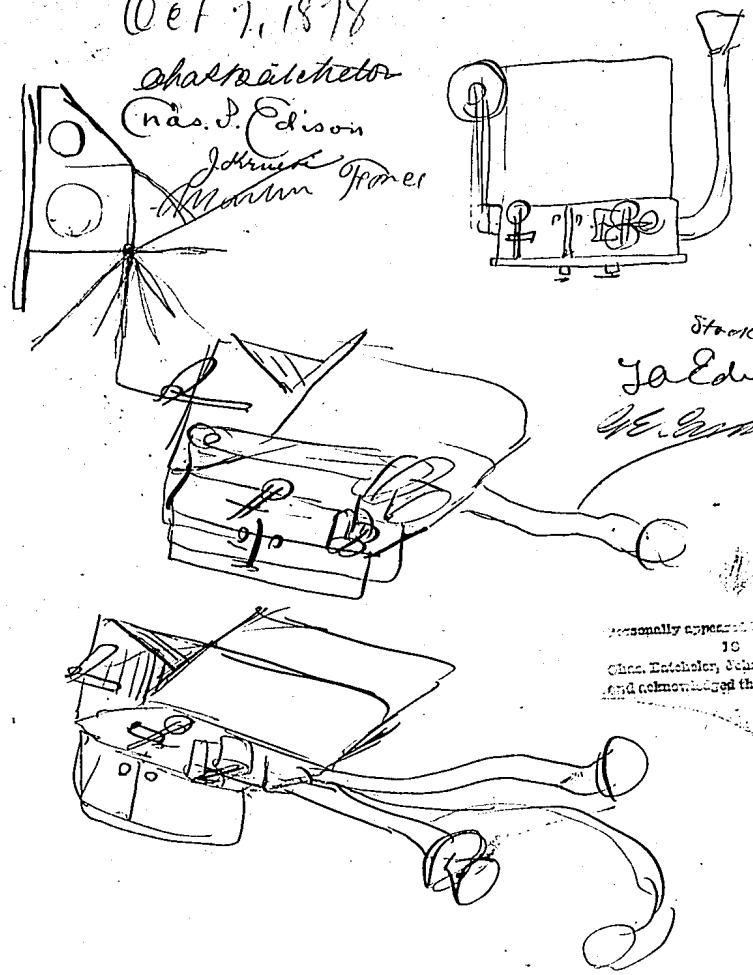
Notary Public.



Copied on page 98 Vol of New Record
Exp Rutherford Oct 8, 1878 L E Cameron

Oct 7, 1878

Chas Batchelor
Chas. P. Edison
J Krueger
Martin Force



Stockton L Griffin
T A Edison
W E Carman

Personally appeared before me, this 10 day of Oct. 1878, Chas. Batchelor, John Krueger, and acknowledged the above to be their act.

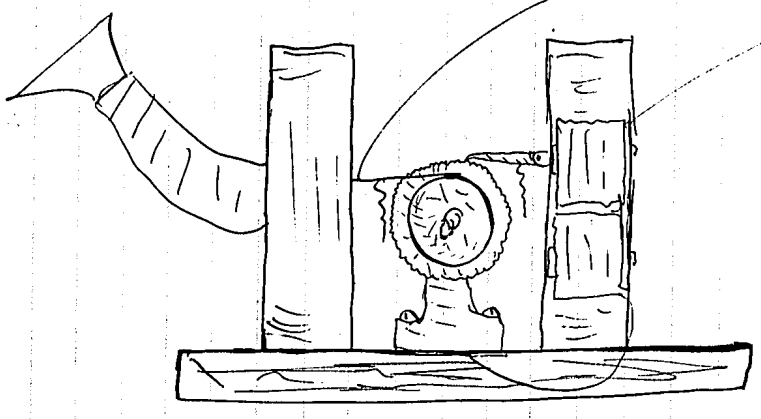
Sidney Bell

Copied on page 87. Vol 4 Exp Researches Oct 10. 1878
W Carman

Copied on page 90: Vol 4 Exp Researches ~~Oct~~ 9. 1878
W Carman

T. A. EDISON.

Menlo Park, N. J.,



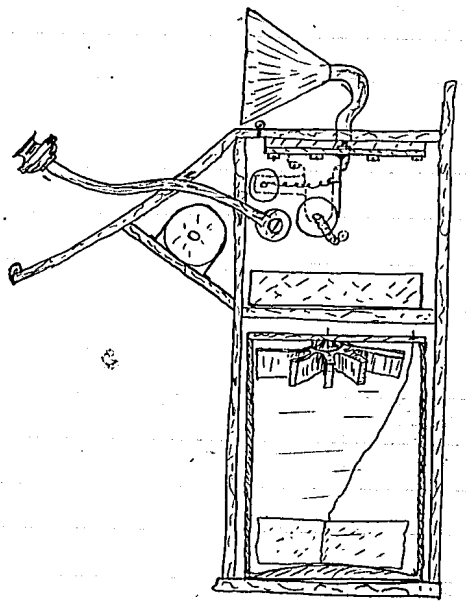
Phonomotor - Motograph Telephone Recr

Chas Batchelor
Oct 9th 1878
J Krueger
W E Carman
Chas. P. Edison
Martin Force

T. A. EDISON.

85

Menlo Park, N. J., 187



Speaking telephone

Oct 10th 1878

T A Edison
Chas Batchelor
M. M. Force
G E Carman
Jno E Kruesi

Chas. F. Edison

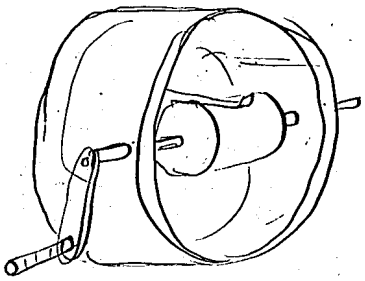
30

27

Oct 9th 1878

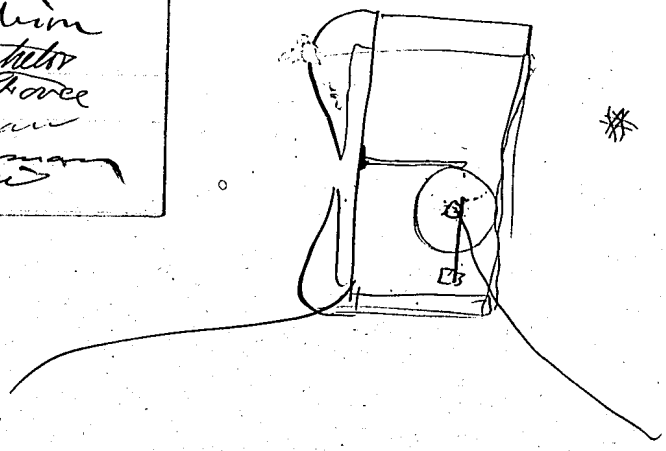
New Receiver

Chas Batchelor
Kruesi
G E Carman
M. M. Force
T A E



Personally appeared before me this day of 18 , the said Thos. A. Edison, Chas. Batchelor, John Kreusi, and Martin Force, and acknowledged the above to be their signature

Notary Public.



Copied on P 90 Vol 4 Gen Recorder Nov 17. 1878
G E Carman

29

29

New Receiver Oct 11, 78 Oct 11th 1878

Chas. P. Edison

Receipt for making Buttons for New Receiver — J. Krueski

10 - pennyweights Chalk — J. A. Edison

1000 grains - Acetate mercurous — G. E. Carman

20 - minimums - Caustic Soda, saturated solution — M. N. Force

Chas. Batchelor

J. Krueski

T. A. EDISON. 28

New Receiver Oct 10. 1878

Menlo Park, N. J., 187

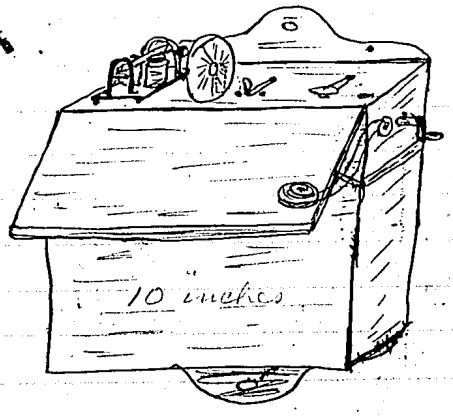
J. A. Edison

G. E. Carman

M. N. Force

Chas. Batchelor

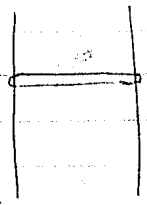
Chas. P. Edison



Entered on Page 91 Vol 4 Exp Records Oct 14 1878 M Carman

1 - Speaking Telephone

Oct 10th 1878



Chas. P. Edison

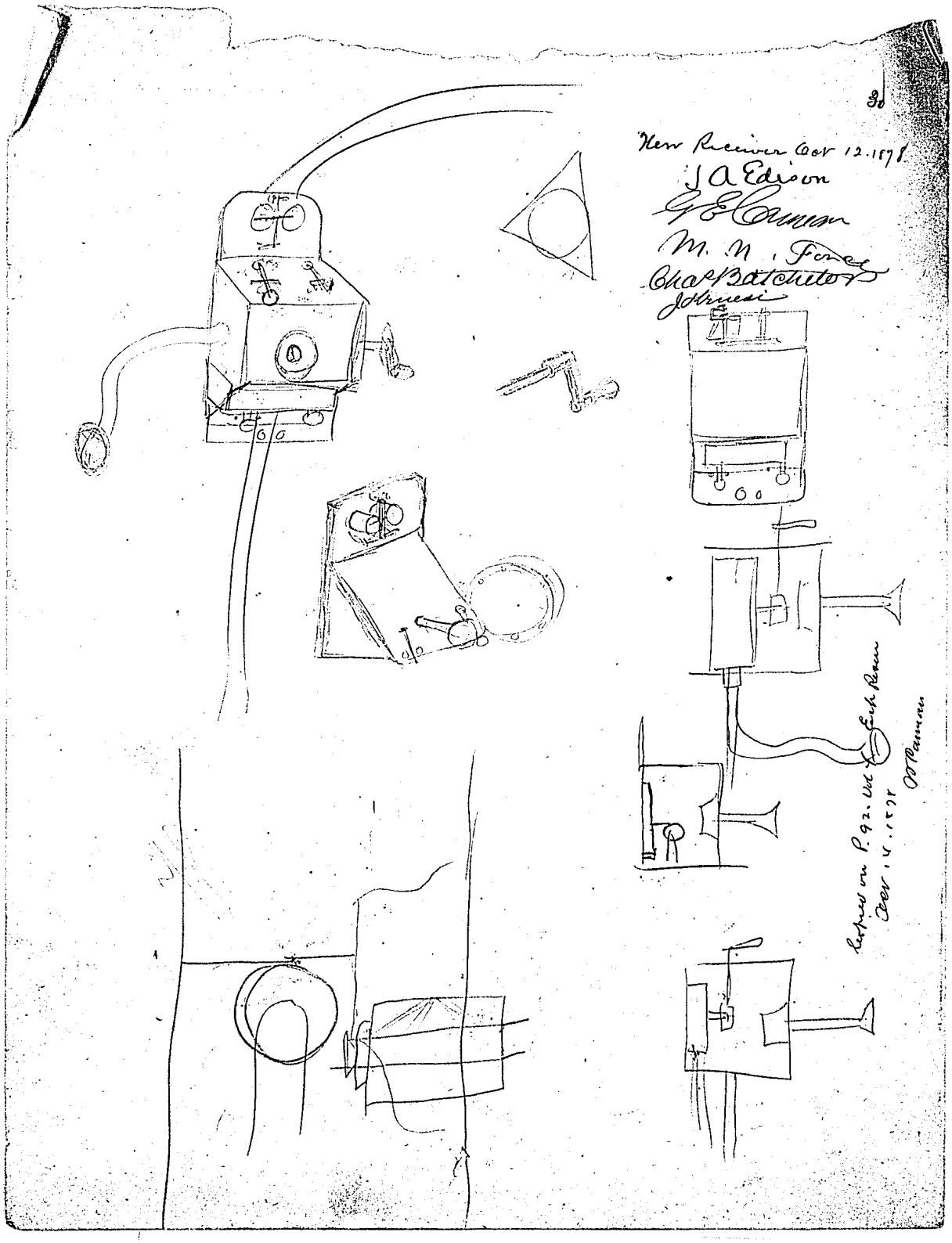
J. Krueski

Entered on Page 91. Vol 4 Exp Records Oct 14. 1878

M Carman

32

31

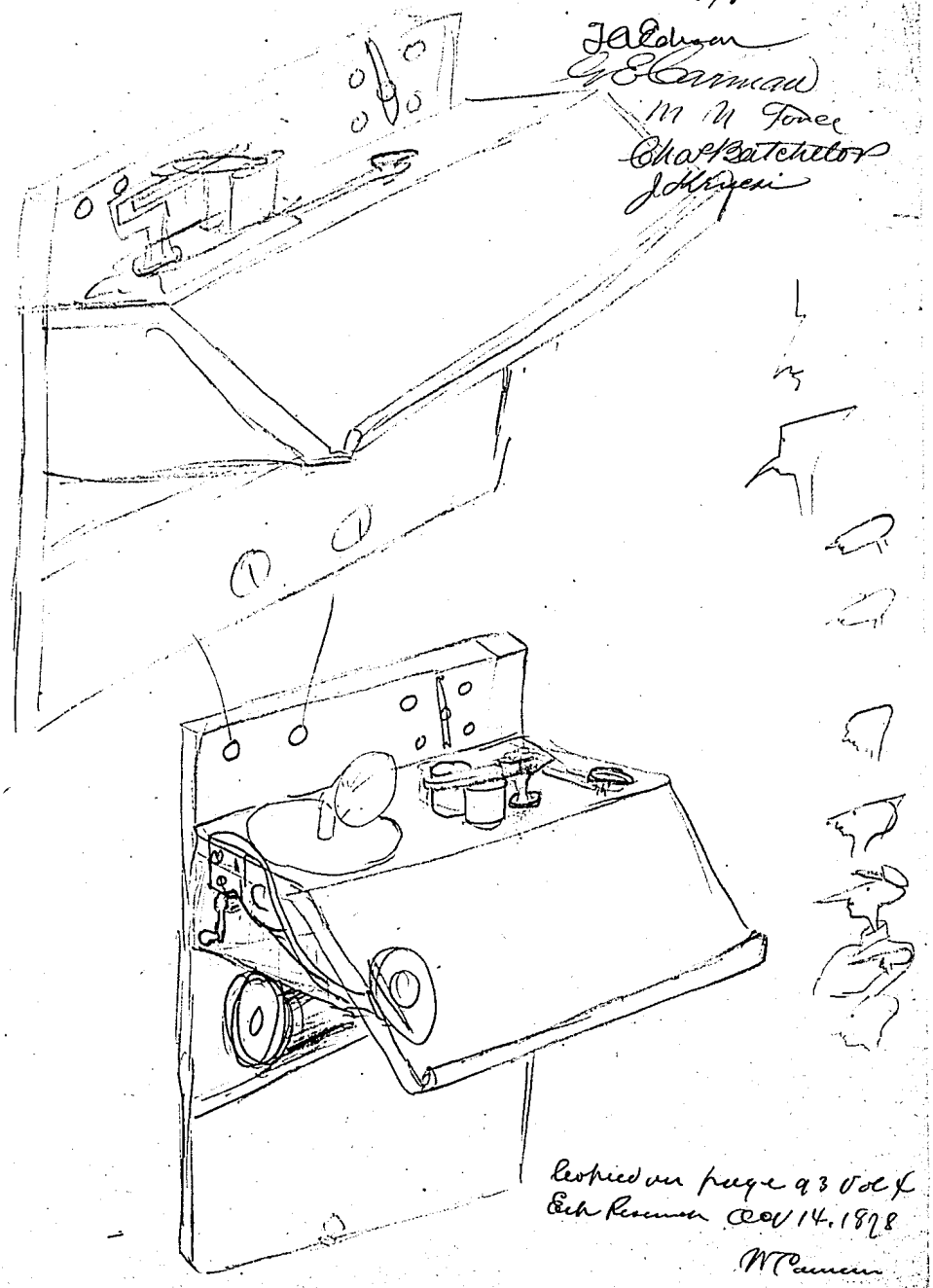

New Receiver Oct 12. 1878
T A Edison
G E Cannon
M. N. Forney
Chas Batchelor
J Krusi
Refer on P. 92. Vol
Oct 14. 1878
Erik Rosen
O T Cannon

31

New Telephone Receiver

Oct 13. 1878

T A Edison
G E Carman
M M Force
Chas Batchelor
J Krusi



Reprinted on page 93 Vol X
Exh Rooms Oct 14. 1878
W Carman

34

Edisons New Telephone Receiver Oct 13th 1878 32

Bracket for Same

Chas Batchelor

Chas. F. Edison

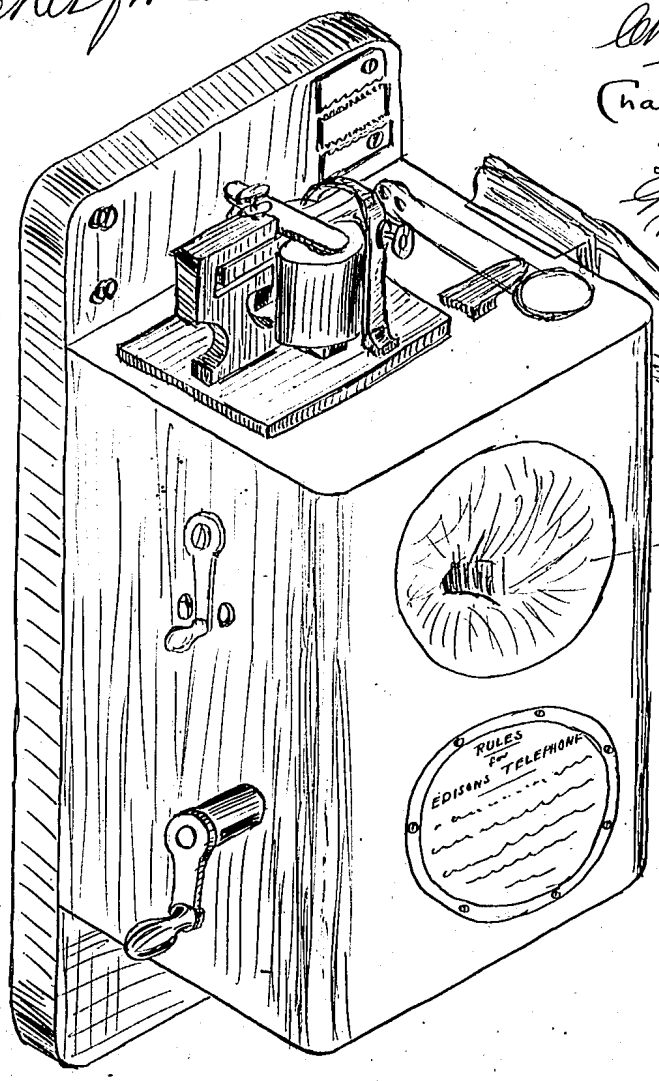
T A Edison

G E Cormac

M N Force

J Krueli

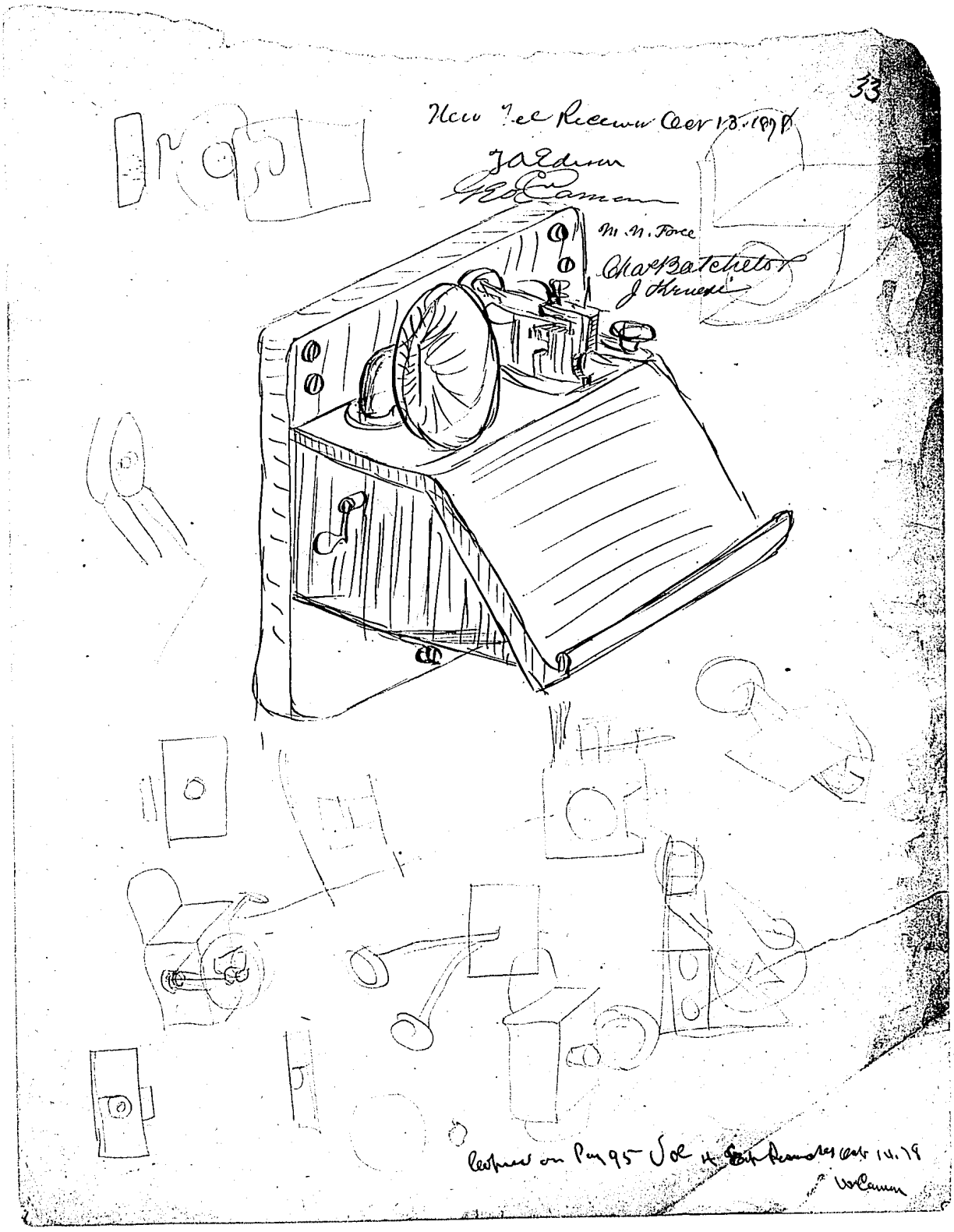
Transmitter



Listen

Coil partitioned off on inside

35



Continued on Page 95 Jor H. Scott Remarks Oct 14. 98
W. Carman

34

~~121~~

New Reccum Oct 13.78

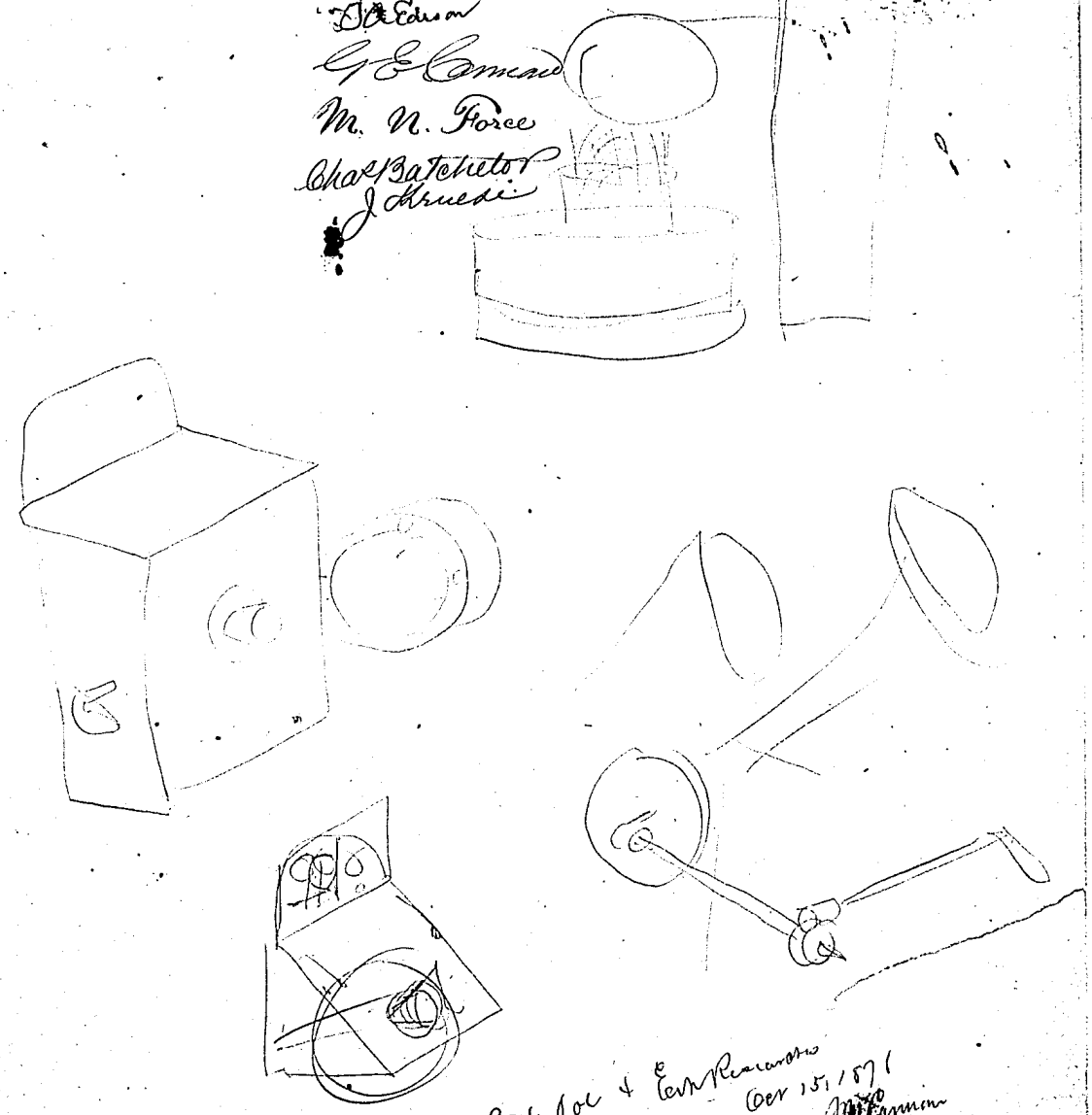
T. A. Edison

G. E. Comand

M. N. Force

Chas Batchelor

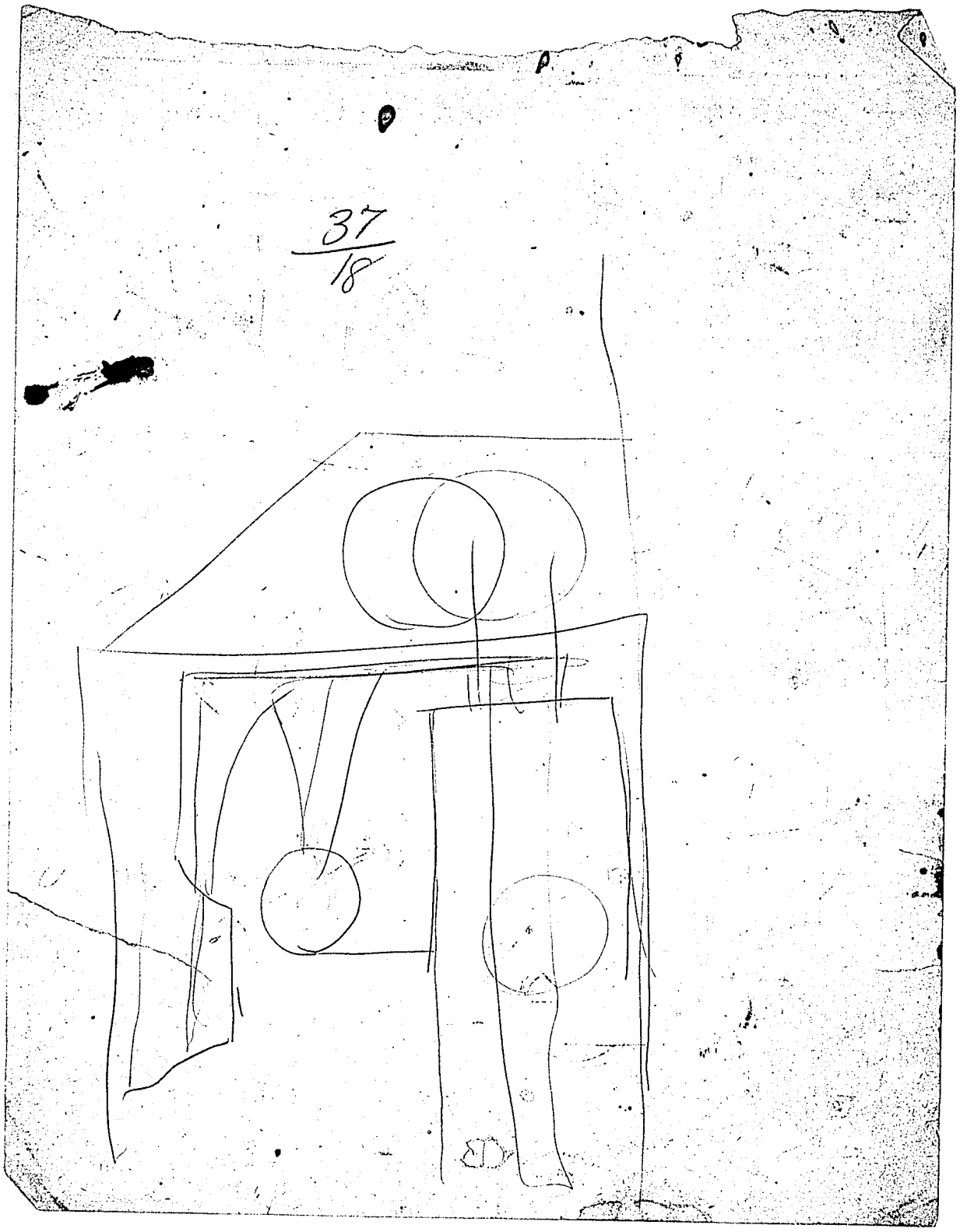
J. Kruesi



Copies on Pag 60 & Ever Reccum Oct 15, 1871

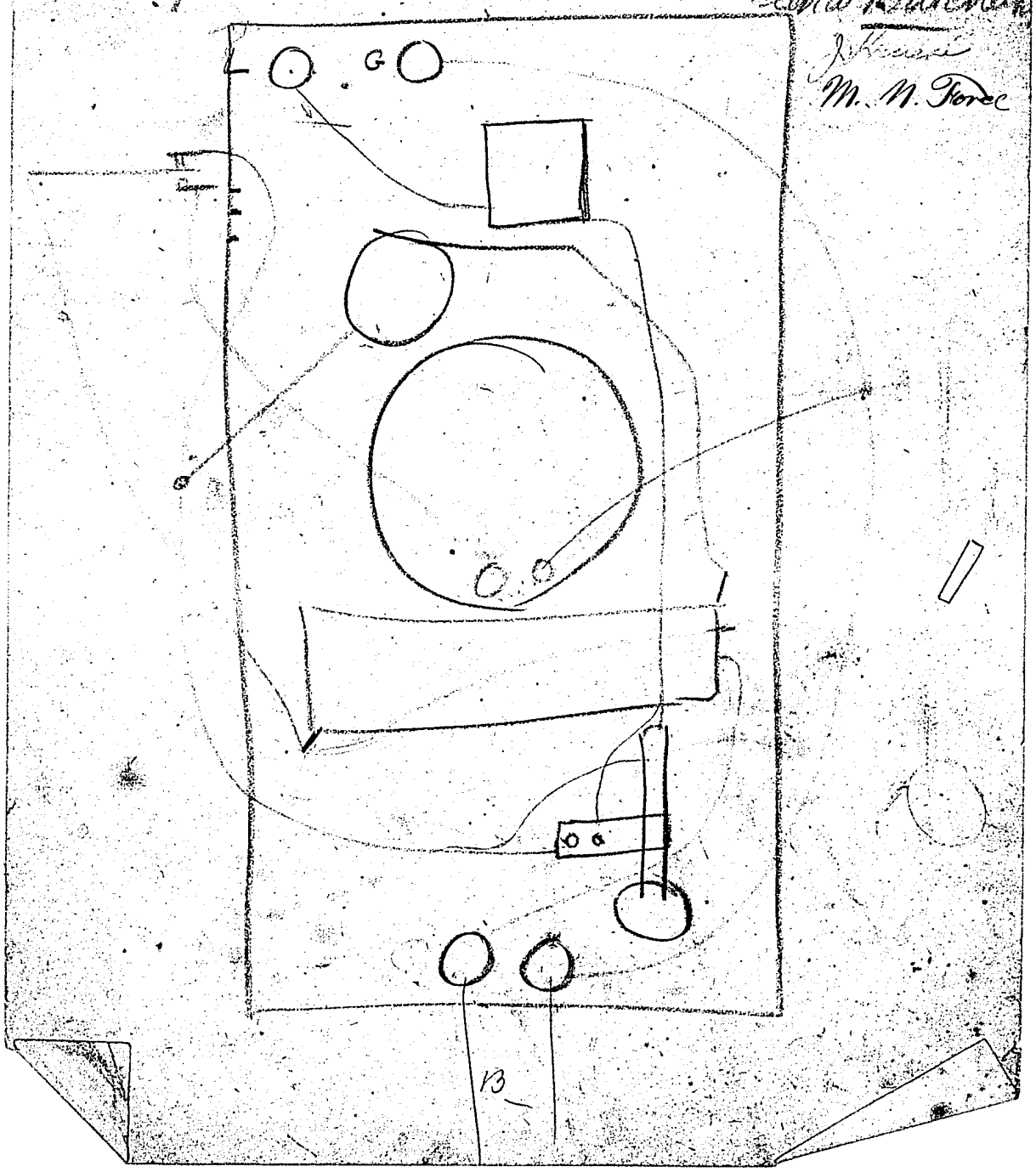
Mr. Cannon

37
18

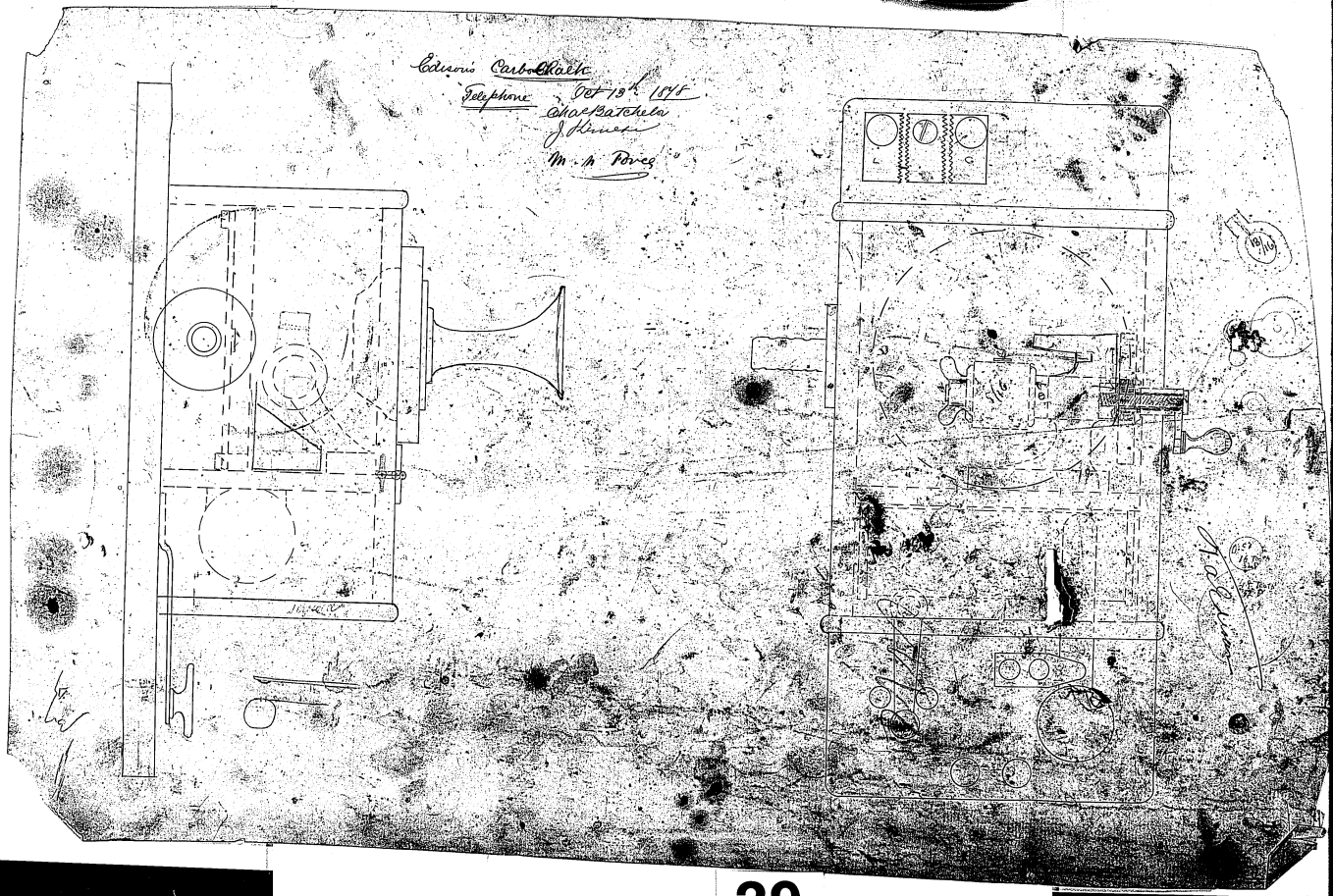


Carbo-Chalk
Telephone

October 13th 187[illegible]
Chas Batchelor
Witness
M. M. Force



38


Edisons Carbon Talk
Telephone Oct 19th 1878
Chas Batchelor
J Kruesi
M A Davies

T. A. EDISON.

Menlo Park, N. J., 187

Oct 14th 1878

Automatic Switch for Telephones

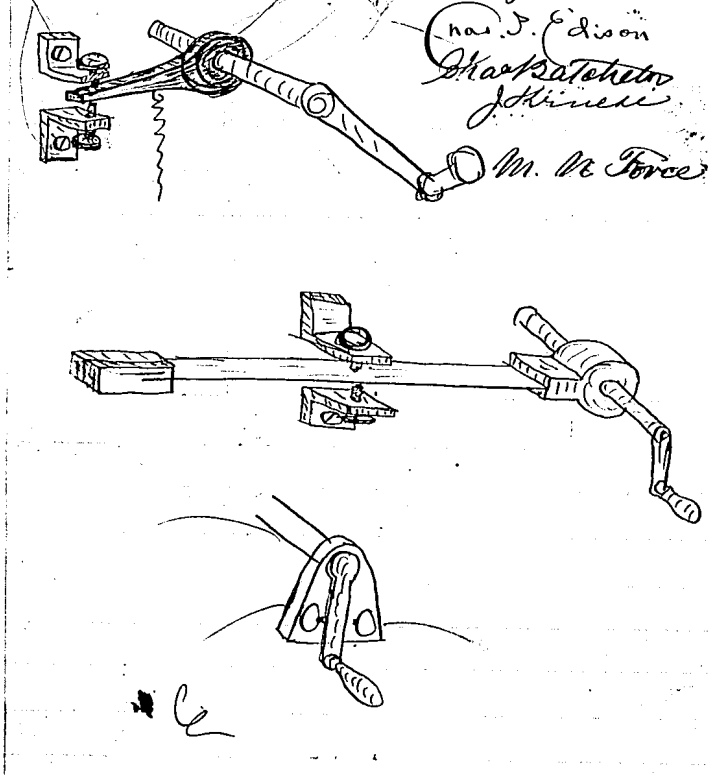
T A Edison

Chas. J. Edison

Chas Batchelor

J Kinnell

M. M. Force



36

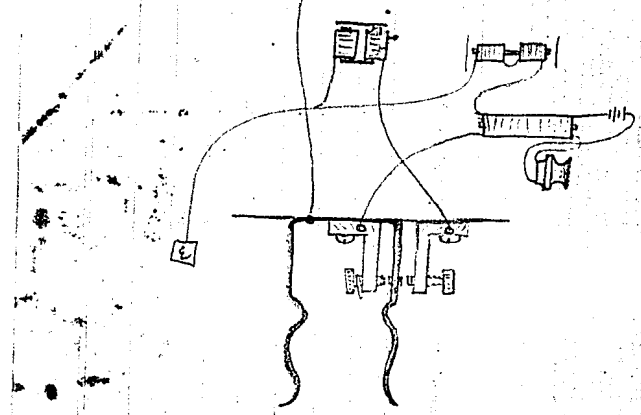
T A Edison

W E Carman

LINE

M. M. Force

Chas Batchelor



Automatic Switch for Telephones

Oct 14th 1878

Chas. J. Edison

J Kinnell

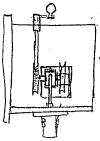
they wont always put tube up & will take it down before they could

Batchelor

40

41

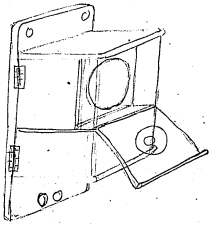
Carbo Chalk Telephone
or New Receiver — Oct 17. 1878
Thos A. Edison
Chas Batchelor
J Kruesi
M. M. Force



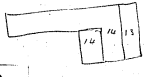
42

Carbo-Chalk
Telephone.

Oct 17 1878
Chas Batchelor
J Kruesi
M. M. Force
Thos A Edison



10 ft
23 ft 3
25 ft. diam —
25 ft



36
25
11
6
11
0.81
22
6
60
11
37
37
72
2
6
6 5

43

Carbo Check Telephone

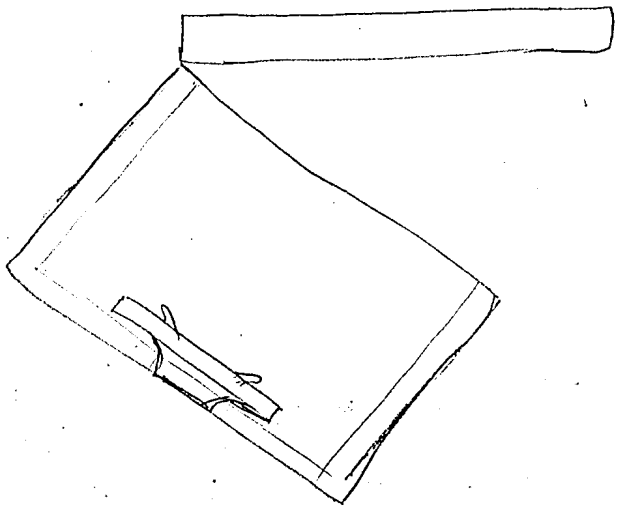
Oct 14 1878

Chas. Batchelor

J. Kennedy

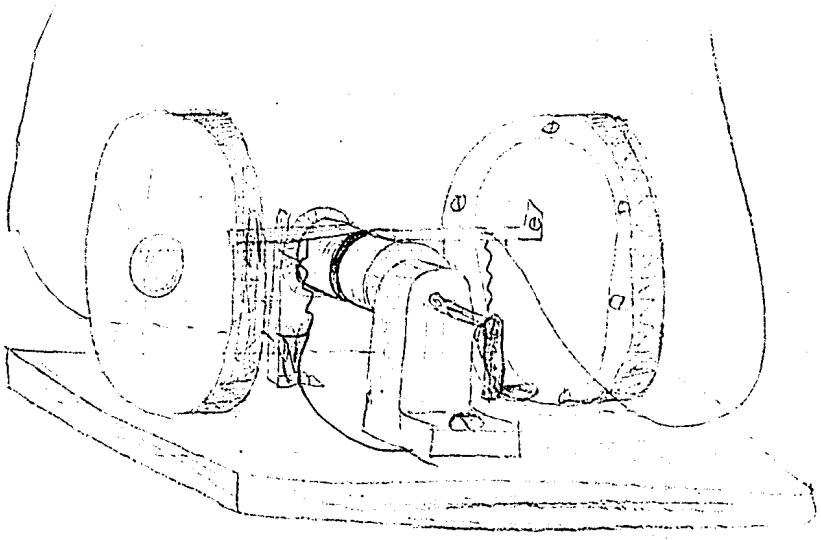
M. N. Force

Thos. A. Edison



44

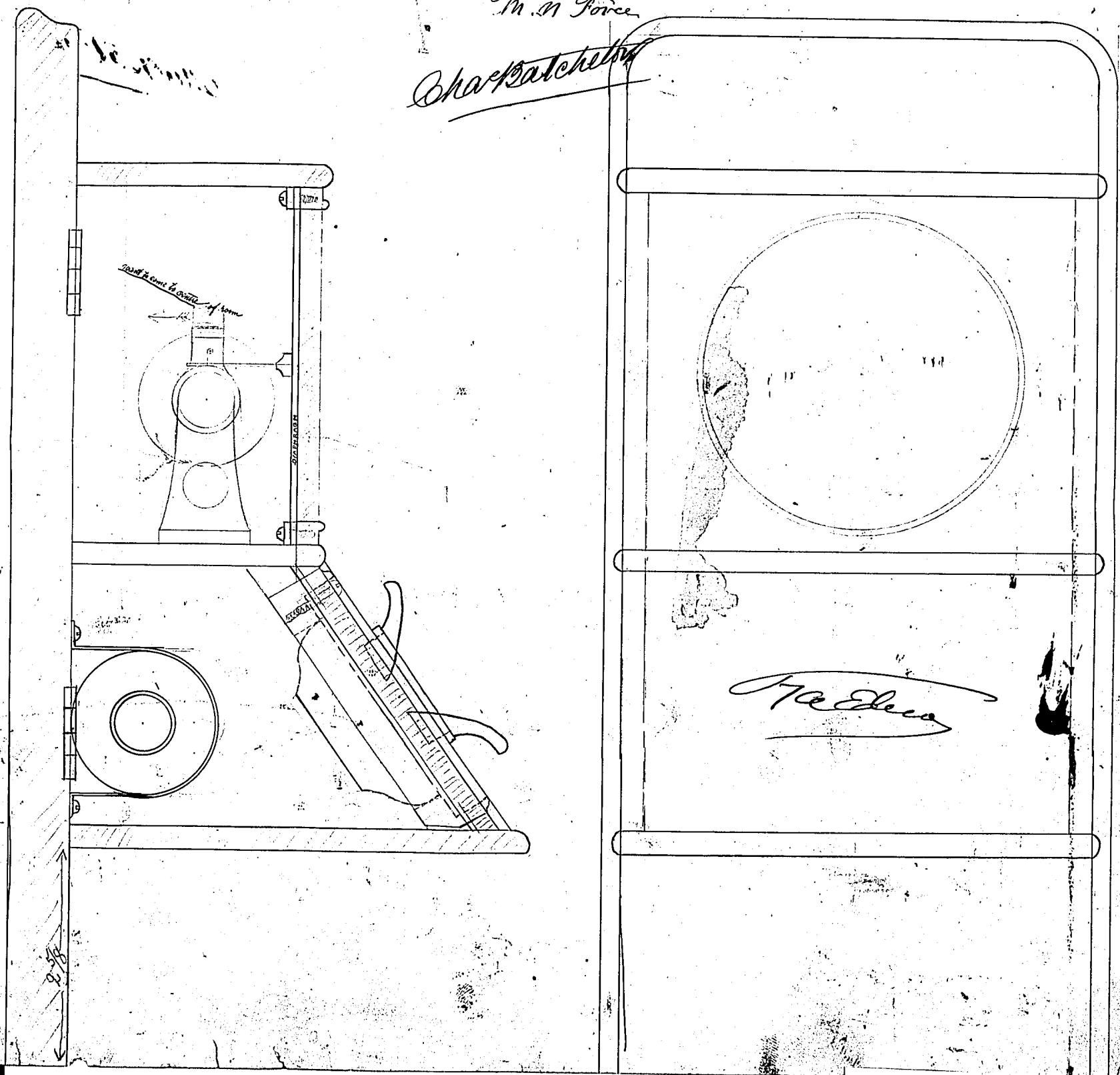
Speaking Telephone
Oct 19th 1878
Chas. P. Edwards



45

Rec. Rcvr. Electro Motograph Receiver
Oct 21st 1888 J. Kruesi
M. M. Force

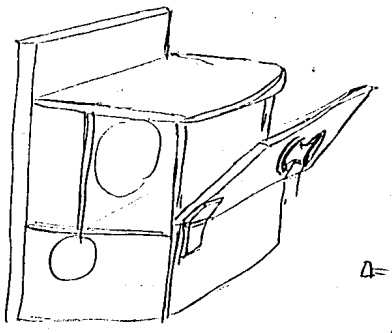
Chas Batchelor



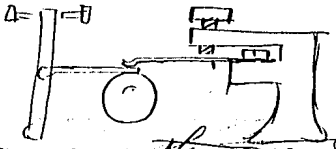
Mr Knesi

Will you start Moffat on this box. You will see that the point is hinged that holds the transmitter

I will be there soon



Will you also sketch out for Hense a chalk holder for the Autograph like this Make the chalks so that they can take them off and put another something same as the one I have drawn for the other one only not so wide



B

Electro autograph receiver prior to Oct 21st 1888

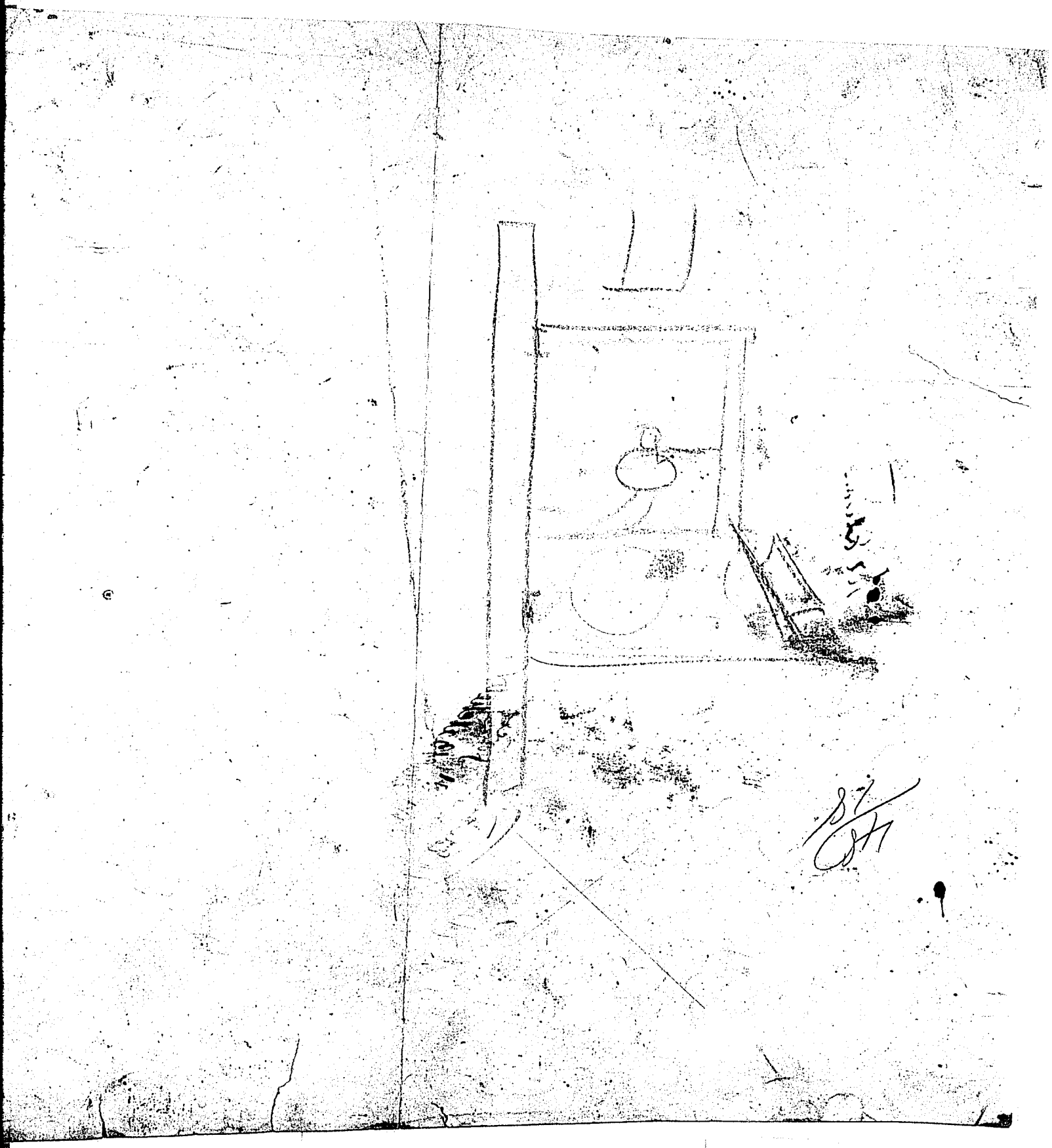
J. Knesi

Wm M. Force

47

Oct 22 1878

Wilson Johnson & Force
Am Philadelphia



Chalk Buttons New Receiver Oct 22nd 1878

Chas. P. Edson
J. Krusi Chas Batchelor
M. M. Force

10 pwts chalk - 1/2 gr acetate mercury - 50 min Caustic Sol

" 1 1/2 " " " "
3 " " " "
6 " " " "
9 " " " "
12 " " " "
18 " " " "
24 " " " "
32 " " " "
50 " " " "

T A Edison

10 pwts chalk 1/2 gr - acetate Mercury 60 min Caustic Solution

1 1/2 " " " " " —
3 " " " " —
6 " " " " —
9 " " " " —
12 " " " " —
18 " " " " —
24 " " " " —
32 " " " " —
50 " " " " —

the above experiments with No 1 caustic Solution Containing - 5= pwts Caustic Soda and 20z water

Chalk Buttons for — Meco Receiver

Oct

Chas Batchelor Thos. A. Edison
J. Ott
M. A. Force

The following experiments with no 2 Caustic Solution - Containing 2½ pwts Caustic Soda and two ounces water

10 pwts Chalk -	½	~~grains~~ grains	Mercury -	20 min	Caustic Solution
"	"	1½	"	"	"
"	"	3	"	"	"
"	"	6	"	"	"
"	"	9	"	"	"
"	"	12	"	"	"
"	"	18	"	"	"
"	"	24	"	"	"
"	"	32	"	"	"
"	"	50	"	"	"

MAE

New Receiver Oct 22d 1878

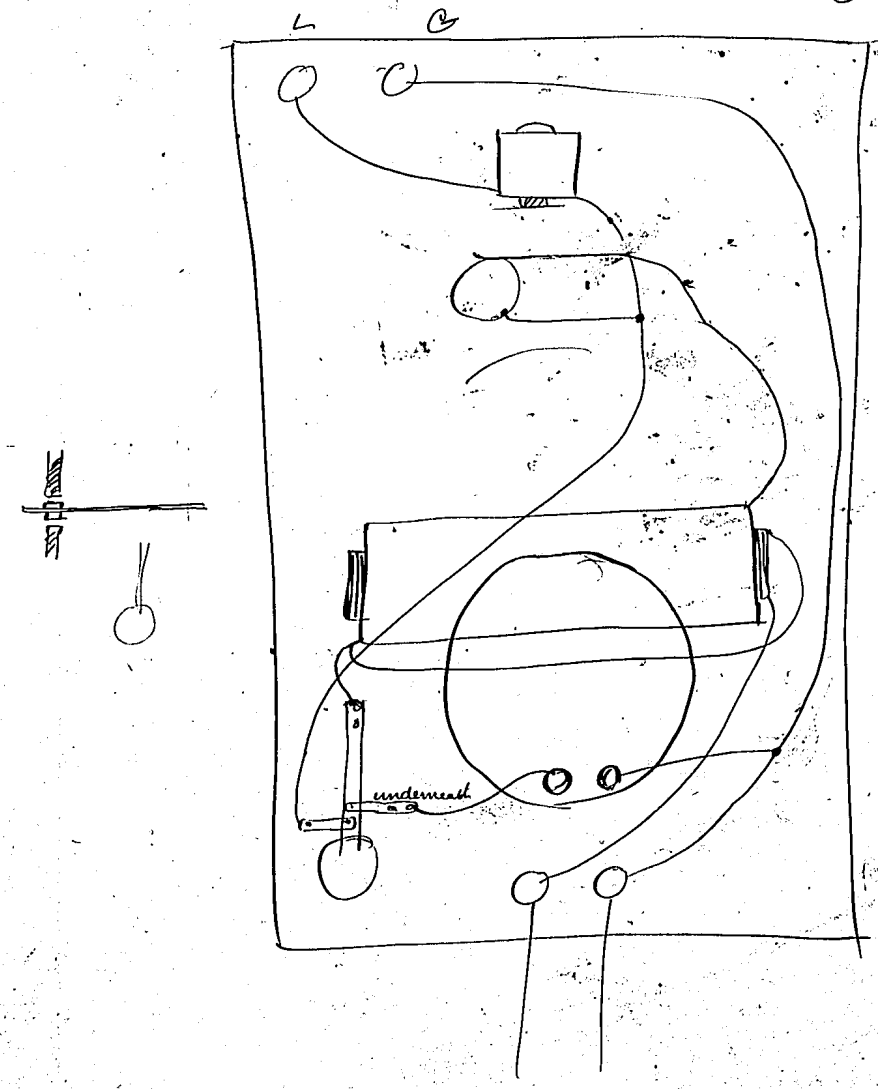
J Kruesi
Chas Batchelor
M. M. Force

Connections

7A

L G

7A Edison



51

Chalk Buttons for New Receiver

Thos A Edison

Chas Batchelor

M. M. Force Oct 22nd 1878

J. Kenyon

10 pwts Chalk - 1/2 gr Acetate mercury - 30 min Caustic Solution

" 1 1/2 " " " "

" 3 " " " "

" 6 " " " "

" 9 " " " "

" 12 " " " "

" 18 " " " "

" 24 " " " "

" 32 " " " "

" 50 " " " "

T A Edison

10 pwts Chalk - 1/2 gr Acetate mercury 40 min Caustic Solution

" " 1 1/2 " " " "

" 3 " " " "

" 6 " " " "

" 9 " " " "

" 12 " " " "

" 18 " " " "

" 24 " " " "

" 32 " " " "

" 50 " " " "

52

October 22nd 1878

Chalk Buttons for New Receiver —

Chas Batchelor

Thos. A. Edison
Johnson
M. M. Force

10 parts chalk — 1/2 grain Acetate mercury — 10 min
Caustic Soda Solution — "NOTHING"

10 parts chalk	1 1/2 gr	acetate mercury	10 min	Caustic Sol	Nothing			
" " "	3	"	"	"	"	"	"	Nothing
" " "	6	"	"	"	"	"	"	Nothing
" " "	9	"	"	"	"	"	"	Nothing
" " "	12	"	"	"	"	"	"	Nothing
" " "	18	"	"	"	"	"	"	Nothing
" " "	24	"	"	"	"	"	"	Nothing
" " "	32	"	"	"	"	"	"	Nothing
" " "	50	"	"	"	"	"	"	Nothing
" " "	1/2	"	"	"	20	"	"	Nothing
" " "	1 1/2	"	"	"	"	"	"	
" " "	3	"	"	"	"	"	"	
" " "	6	"	"	"	"	"	"	
" " "	9	"	"	"	"	"	"	
" " "	12	"	"	"	"	"	"	
" " "	18	"	"	"	"	"	"	
" " "	24	"	"	"	"	"	"	
" " "	32	"	"	"	"	"	"	
" " "	50	"	"	"	"	"	"	

A Edison

24
768
112

Nothing Chalk Buttons Receiver No

53

Telephone

Oct 26 1878

Chas Batchelor

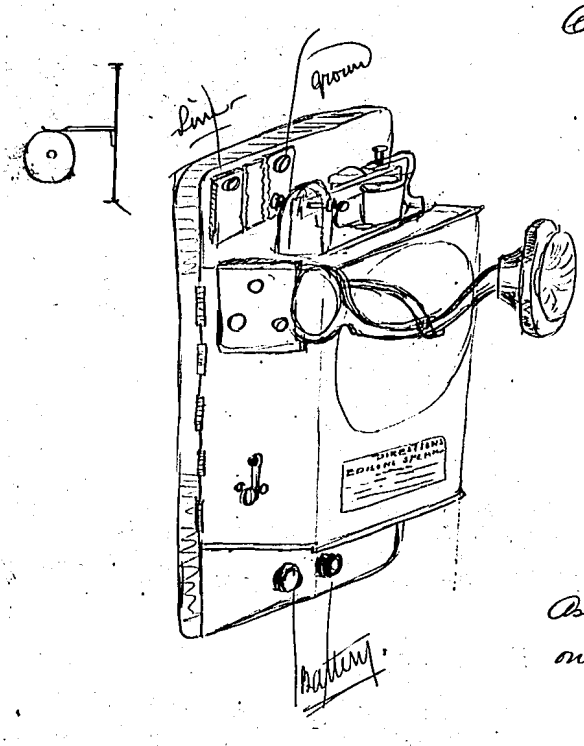
T A Edison

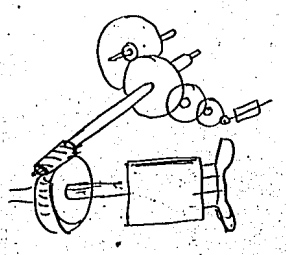
Johnson

Mr. A. Porce

Dear Sir:—

Make a telephone this pattern and put a clockwork inside to run the "chalk" and make the switch stop and start it. Design the chalk to be turned by a worm as it will not be strong enough without, as there is a strong pressure on the chalk





I think you had better drive from the second shaft and have only a few teeth in the worm wheel

B

54

Telephone New Receiver Oct 24th 1878

Discs made to receive on of = Chas Batchelor

42 grain Hg acid 30 min Na solution Chas Batchelor

not very low but diaphragm squeaks

32 grain Hg 30 min Na caustic = M. M. Force

very low + diaph. squeaks

44 grains Hg. 30 min Na

pretty good + loud no squeak

50 grains Hg 50 min Na 50 min Na

loud, needs a good deal of pressure though

very good. call it standard at present

6 grains Mercury 30 soda col

No good Black

42 grains Mercury 50 Min Na

loud, needs a good deal of pressure though

very good – good as standard

30 grains Mercury 40 Soda

Excellent good but squeaks

best yet = Have to turn quick

3 grains Mercury 30 Soda

excellent good have to turn slow

not quite so loud but clear than previous ones

55

New Receiver for Telephone 3

Oct 2nd 1878.

Chas Batchelor
Chas D Edison
M M Ford Johnson

= 30 grains Acet. Mercury. 20 minims Soda Solution

very poor. makes squeaking noise and when you turn fast it almost entirely disappears
Broke taking out

A a E.

= 6 grains acet. Mercury. 40 minims Soda Solution
This is an elegant one, gives the natural voice and requires no pressure to being good for clockwork. very loud: squeaks a little

X

= 42 grains Acet. Mercury 20 minims Soda Solution
Not good enough = fair artic. but too low

12 grains Act Merc. 20 minims Soda Solution
poor not loud enough

24 grains Acet. Mercury 40 min. Soda Solution
No good

18 grains Acet Mercury 20 min Soda Solution
No Good

56

New Receiver for Telephone
Continued 2

Oct 27th 1877
Chas Batchelor
Chas A Edison
J Armen
M M. Force

36 grains Acetat Hg and 40 min Soda Solution
too low to be of use - no good -

3 grains Acet Hg and 40 min Soda Sol.
pretty fair but not up to Standard

42 grains Mercury 40 Soda Solution
Broke

A a E

18 grains Mercury 40 Soda Solution
very good when turned Slow - diaph. squeaks

X

36 grains Mercury 20 Soda Solution
Middling fair articulation - Makes Considerable noise

24 grains Mercury 20 Soda Solution
pretty good. seems to want stiffer diaphragm

X

36 Mercury acet 30 Soda Solution
Bang up. good best yet!!! loud & Clear

X X

Broke after

12 grains Mercury 30 min Soda Solution
not very loud but works with light pressure

57

New Receiver for Telephone 4

Oct 27 1878

Chas Batchelor
Chas. A. Gibson
J. Kruesi
M. A. Forree

3 grains Acet. Mercury 20 Soda Solution

Faw but low

---

18 grains Acet. Mercury 30 Soda Solution

This is the Best of the lot very loud and clear but it shake the diaphragm so that it rattles.

---

12 grains Acet Mercury 40 Soda Solution

No good. not loud.

Set the two best in the instruments and left them

58

Telephone. New Receiver

Oct 28th 1878

Chas Batchelor
Chas R Orison
J Kruesi
M A. Force

Discs composed of.

Acetate of Mercury

We found that the current on line goes out through the transmitter but enough battery current also escapes through to affect the autograph very considerably & that by putting an extra cell in line & not changing the line or battery wires we can get excellent talking

12 Acetate Mercury 50 Soda Solution
Not loud but good

figures were rubbed out
TAE

24 Acetate Mercury 50 Soda Solution

---

18 Acetate Mercury 30 Soda Solution
Moulded with heavy pressure —
very good, excellent

X

Same with light pressure
Not so good as the 18/30.

30 Acetate Mercury 60 Soda Solution
Pretty good but not so good as 18/30

59

New Receiver Telephone
Chas P Edison
Oct 27-8 1878

Chas P Edison

Witness
M B Force

3 gr. - acetate mercury - 40 min Carbolic Solution - 10 part bath -
6 0 -
12 -
18 -
24 -
30 -
36 -
42 -

M a E
Chas Batchelor

Chas. P. Edison

60

Telephone
New Receiver

Oct 28, 1898

Chas B Patchett
Chas B Jaison
J Krueger
M. M. Force
A E

12 Acetate Mercury 50 Soda Solution
pretty good but not loud enough.

36 Acetate Mercury 50 Soda Solution —
not so good as it ought to be
too low

36 Acetate Mercury 40 Soda Solution
Not good have to turn too quick.

12 Acetate Mercury 40 Soda Solution
Good not very loud but clear
wants very little pressure wont work with Bell

6 Acetate Mercury 50 Soda Solution
No good

42 Acetate Mercury 50 Soda Sol.
Good. first rate loud & clear
good artic.

30 Acetate Mercury 20 Soda Sol.
No good

61

New Receiver - Telephone

Oct- 28th 1878

Chas. S. Dixon
J. Krieni
Wm M Force

T & E
Chas Batchelor

acetate
Mercury - 3 gr - 20 - min Caustic Solution 10 part Chalk -
" 6 "
" 12 "
" 18 "
" 24 "
" 30 "
" 36 "
" 42 "

" 3 gr - 30 min Caustic Solution 10 part Chalk
" 6 "
" 12 "
" 18 "
" 24 "
" 30 "
" 36 "
" 42 "

very low —
very low —

62

Telephone
New Receiver

Oct 30th 1878
T A E
Chas Batchelor
Chas F Edison
M. M. Force

24 Acetate Mercury 20 Soda Solution
Good. nothing extra but pretty good. J Howes

12 Acet. Mercury 50 Soda Solution M. M. Force
very loud. rattles bad try thicker diaph.

6 " " 20 " very fair; clear and good #

42 " " 30 " good, loud, rattles

Put in thicker diaphragm (twice as thick)

3 " 20 best yet No 2 Solution they is real hot for articulation Inf to test

18 " 20 Just as good as above

6 " 20 -- loud but poor articulation

18 " 40 -- loud but poor articulation

42 40 -- some what better

12 30 --- ditto - -

6 20 --- the same as 3 = 20 —

How in the?

It seems to me that we want a greater percentage of caustic Soda in the "chalks". So make a concentrated solution of it and try 3 - 20 on it —

63

Telephone Receiver

Oct 31st 1878

Chas Batchelor
A E
Chas. P. Edison
J Kruesi
Geo. M. N. Ponce

Tests for
Constancy of the mes. used last night

42 grains Acetate Mercury 40 Caustic Soda Sol.
bang up on thin diaphragm but rattles a little.

42 — 40 on thick diaphragm not so good
We have set this in box 8 for constancy at 11 p.m.

~~3 — 70~~

18 — 30 (No 2 Solut. ~~not certain~~) Very loud. in No 1 Box

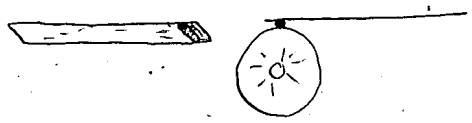
12 — 30 (No 2) Loud but no articulation bit.

24 — 20 " same as ~~above~~

18 — 40 (No 4) loud but no articulation

6 — 20.

a point like this —



N.G. makes it rattle just as much —

64

New Receiver Oct 31st 1876

Chas. Batchelor

Chas. Batchelor

6 acetate Mercury and 20 Caustic Soda of number (3.) - works very good - with pretty good pressure by for permanentcy

Acetate Mercury 18 and Caustic Soda 30 - of No 4 is fair but not very Good - improves in using

Acetate Mercury 18 and 30 Caustic - of No. 3 Solution - busted in putting in but tried with peice and seemed to worked good

18 Acetate Mercury and 50 min Caustic Solution to much Caustic Soda - Busted before trying it

3 acetate Mercury and 40 Caustic Solution works rather low - try them all in the new ones being made

18 Acetate Mercury and 40 Caustic Soda - works fair It gives very good articulation but too when the wires are reversed -

65

Telephone Receiver

Oct 31st 1878

Thos A Gaisson J Ahmedi Chas Batchelor M. N. Force

X X 3-30. No 2 on small diaphragm good
fair. left in for ~~test~~ 5 AM Nov 1st Box 5. M. N. Force

X X 12-30 No 2 on ~~thickest~~ diaphragm
very low. but ~~excellent~~ talking _ left in box
2 for test

Nov. 1st 1878.

No of Box	Chalk	Oct 31st	Nov 1st						
1	6 — 20 No 2 small cup in		only just hear it dried out	We now put large cells water in each with waste to see if any change occurs in night. Force 6 co not one					
2	12 — 30 No 2 thickest diaphragm	low but good talking	only just hear it dried out low						
3	3 — 30. No 2 small diaph	good.	dried up low						
4	18 40 No 3. small cup in	good	dried up low						
5	18 30 No 4 slotting pads in	good loud	dried as it been some articulation						
6	6 — 30 No 1 large cup made with waste	Best yet	about same as 31st						
7	3 — 20. No 1 small cup in	good.	dried up.						
8	3 — 30 No 3 small cup in	good but low	dried out						

Telephone Receiver

Oct 31st 1878
Chas R. Dickson
Chas Batchelor
Johnson
M M Force

Chalks made from 3 gr. Acet. Merc. + 30 minims of Caustic Soda Solution of different strengths M M. Force

No 1 - Soda Solution is 5 dwt Caustic Soda 2 oz. H_2O
2 - " " " 2½ " " " " "
3 " " " 20 " " " " "
4 " " " 10 " " " " "
5 " " "

3 - 30 No 4 Sol.
Good. best articulation. on 4" Diaph. on 3" (Box no 3) diaph. Busted now —

✓ 3 - 30 no 3 sol - (Box no 8) fair articulation but too - Left in for permanency 11 PM Oct 31st

X 6 - 30 - no 1 - Rosengarten - (Box no 6) - Bang up so far, busted, X

X 6 - 30 no 1 Merck about as good as Rosengarden - This is in for in for test 3 AM Nov 1st

6 - 30 - No 2 on small diaph. good elegant but busted it so we could not keep it

3 - 30 No 1 Busted before putting in box

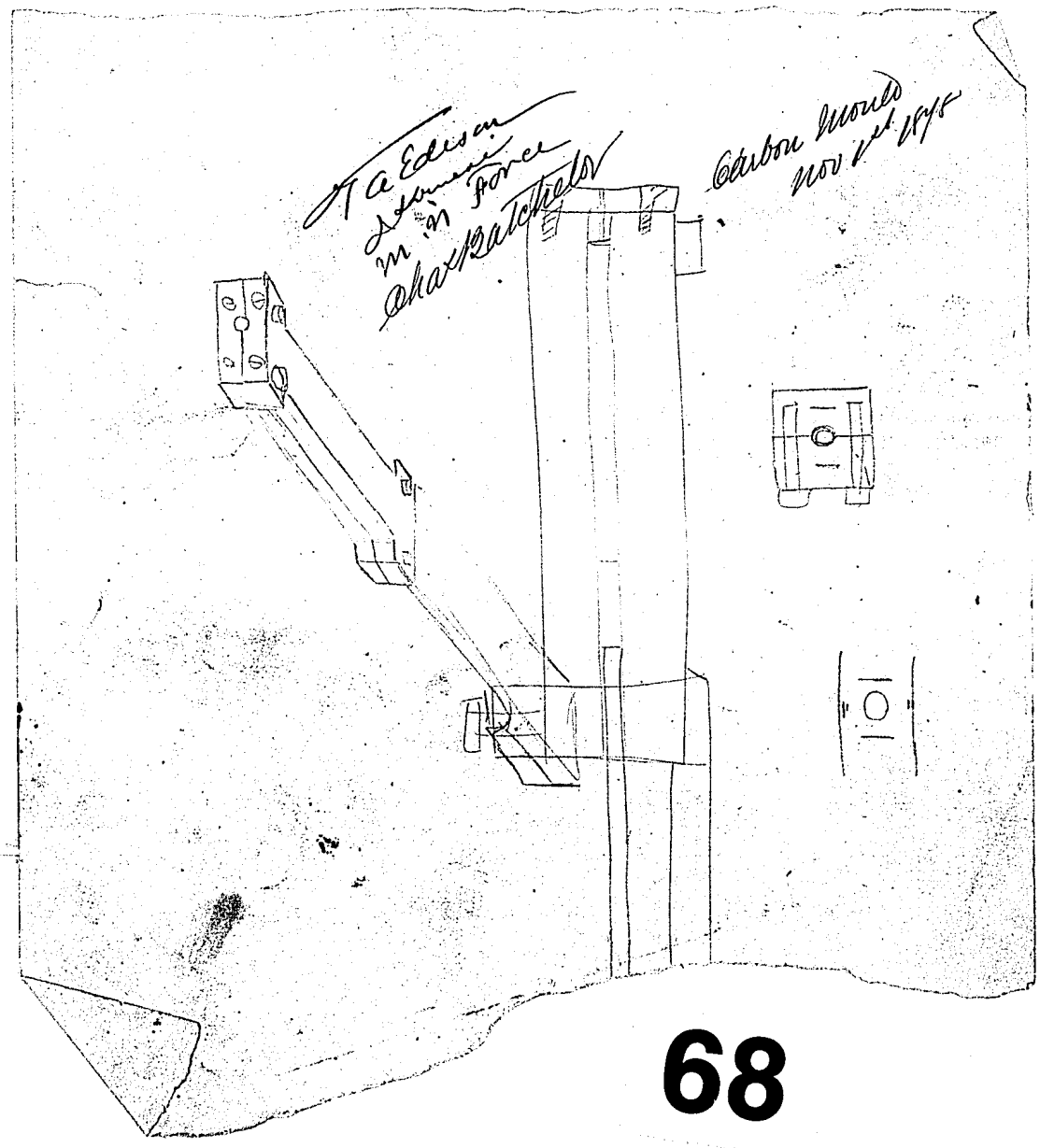
X 18 - 40 No 2 Box 4 in for test Nov 1 3 AM

X 3 - 20 No 1 Made 28th Oct put in tin foil + put in for test Box 7. Oct 31 11 pm

X 18 - 30. No 4 put in 12 m. Oct 31st in Box 5

X 3 30 No 2 Busted

67


T A Edison
Carbon moulds
Nov 1st 1878

Telephone Receiver
Continued

Nov 1st 1915
J A E
Chas Batchelor
Chas P Edison
J Krueger
M N. Fama

— 42 gr Hg 30 Soda Sol. No 4
poor (Busted)

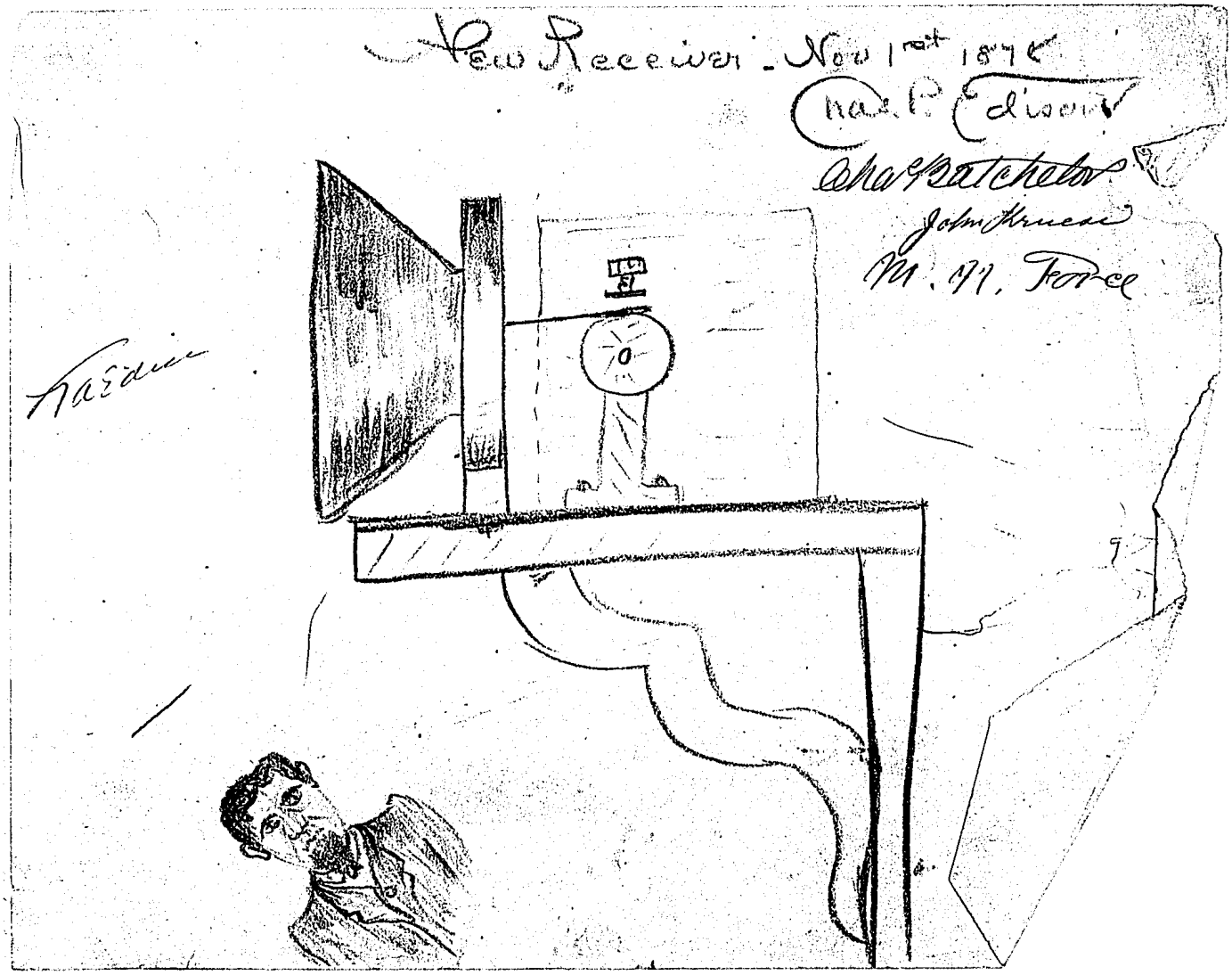
— 18 Hg 20 No 3 Sol.
very good but not so good as the old original

— 36 Hg 20 No. 3 Sol.
very fair but not up to Standard

— 3 Hg 20 No 3 Sol
This we think is good but the hole is too big for shaft we make another one of this & try it

— 6 Hg - 30 - No 3.
Loud (exceptingly) try it on other machine

3 Hg 30 No 3.
good + Loud
We boiled the diaphragm in paraffin but it apparently was just the same -


New Receiver - Nov 1st 1876
Thos. A. Edison
Chas Batchelor
John Kruesi
M. M. Force
Naidin

Telephone Receiver — Nov 1st 1875
Continued

T A E
Chas R Carson
J Kinnear
N N Rowe
Chas Batchelor

— 12 Hg — 3 Soda Sol No 4 —
Not bad but very fair

— 36 Hg — 40 No 3,
No Good at all

— 30 Hg — 20 No 3
Good but not Good enough.

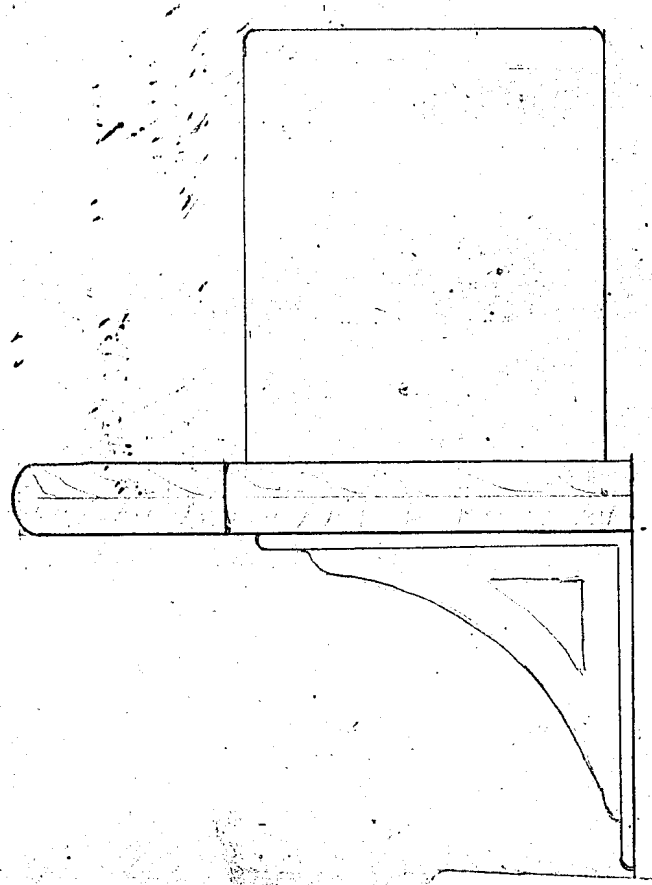
— 6 Hg — 30 No 1 Sol.
Bang up just as good a original !!!

All chalks made with strong solutions of soda are much more brittle than those made before.

6 A.M. Nov 2nd 1875

New Receiver for Telephone Nov 2d 1878

J Kruesi
Chas Batchelor
M. M. Force



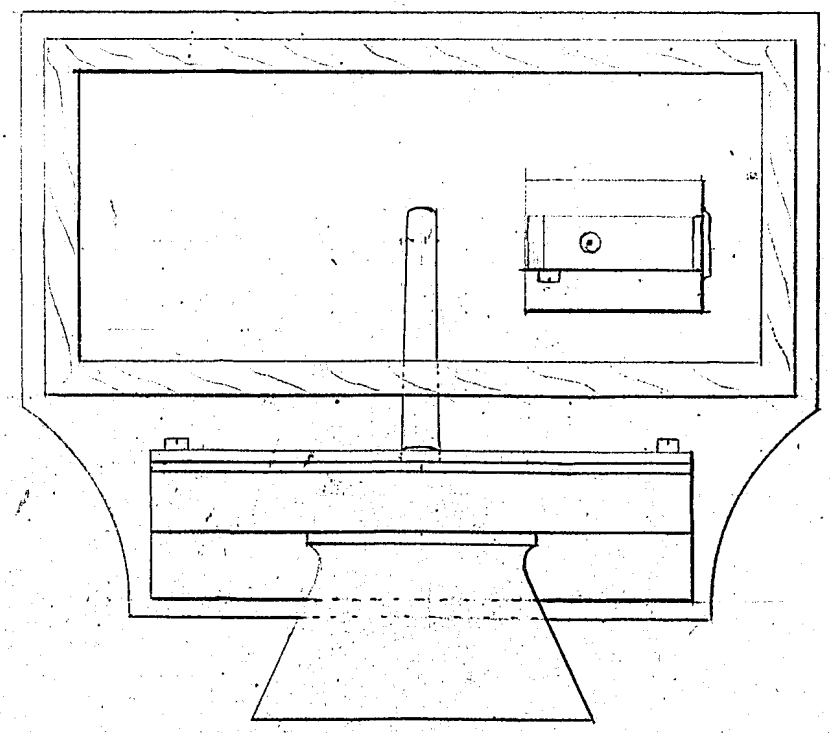
72

New Receiver for Telephone Nov. 2d 1878

J. Herrick

Chas Batchelor

M. M. Ford



73

Receiver

November 20th 1876

Chas. F. Grison
Chas Batchelor
M. M. Force
J Shrude

Experiments for the 21st

wet button through and see if it will do any good to put in resistance in line

make wooden sleeve instead of Brass one now used and see if can get current when wet

See if the receiver works better if the transmitter is adjusted with more resistance when the button is wet

take button wood 1/2 inch dia and 1 mold about 1/2 inch plaster paris on out side moisten with Caustic and try

try the above with brass core instead of wooden one

4 4 4 4 4 4 Thomas T Robart Trans Transfer Trans

Thomas

Thomas T Robart

try find resistance of button when wet through ~~with~~

also resistance when dry

2000 ohm

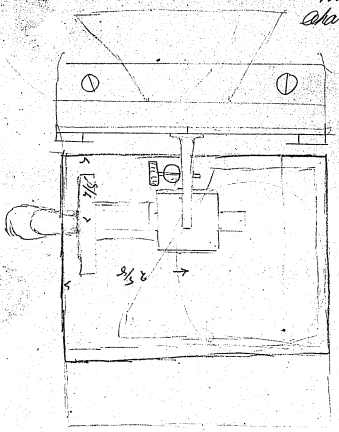
74

New Receiver for Telephone Nov 20 1878 J. Kinnear

Explain to Kinnear

M. M. Force

Chas. Batchelor



New Receiver New Receiver

Nov 5th 1878.

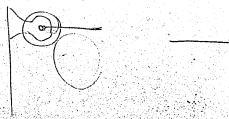
Chas. P. Wilson

To Edison

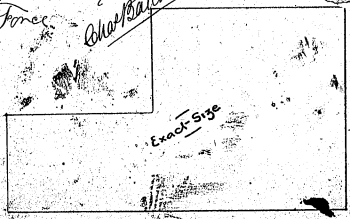
Chas. Batchelor

M. M. Force

J. Kinnear



75



1 inch deep

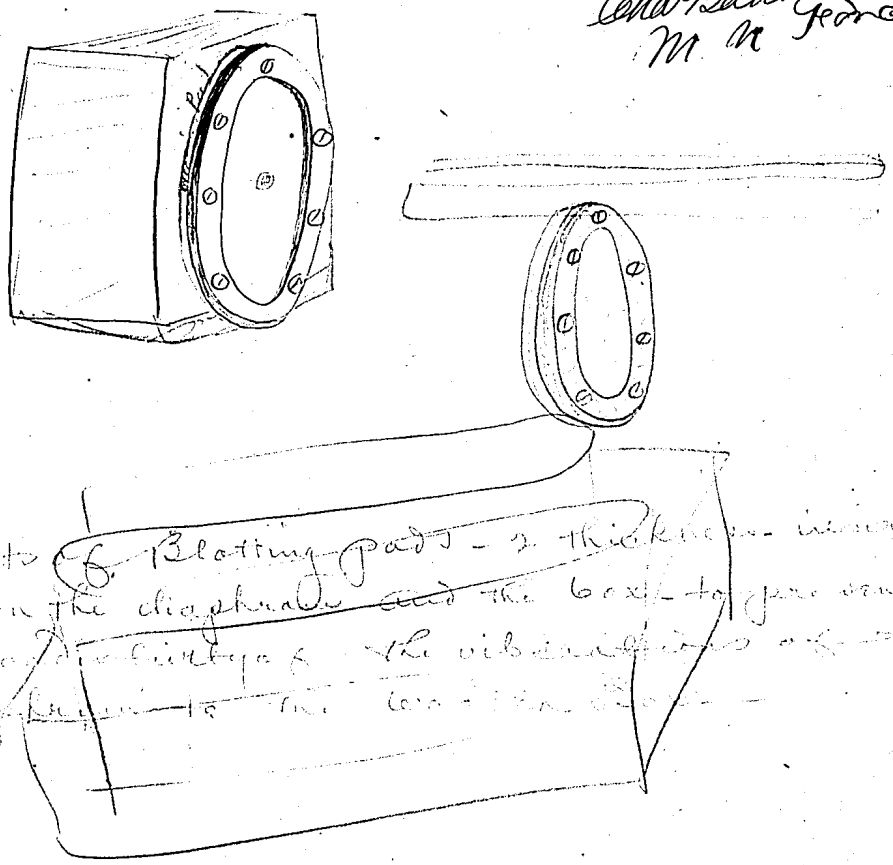
76

New Receiver -

Nov 5th 1878

Chas F Edison
J Ashmead

T A E
Chas Batchelor
M M Pope

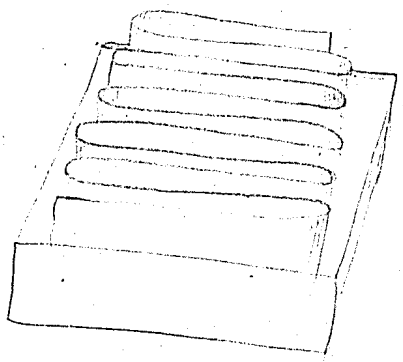


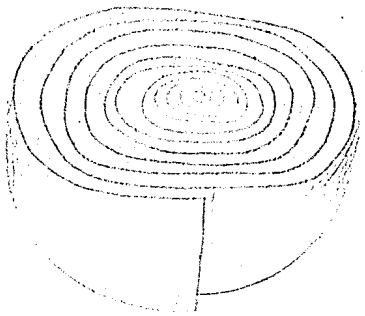
Discs of Blotting pads - 1/2 thickness - inserted between the diaphragm and the box - to prevent the undesirable vibrations of the diaphragm to the box - [illegible]

New Receiver -

November 5th 1878

Chas. Batchelor





New Receiver November 5th 1878

Thos A Edison

N A E

M N Gomez

Johnson

Chas Batchelor

The following course of Experiments with differant pressures given to the buttons –

6-30-No 1 – Very light pressure to soft – busted before trying it –

6-30-No 1 – Light pressure –

6-30 – No 1 – Heavy pressure – in box no 6 – works bang up – I think better articulation than any heretofore – left in for permanency –

6-30 – No 1 – Very heavy pressure – in box no 5 – just as good as the above – left in for permanency –

6:30 – No 1 – moderate pressure –

79

T. A. EDISON.

Menlo Park, N. J., Nov. 7th 1878

T. A. Edison
Johnson
Chas Batchelor
M. N. Force

Experiments

Test resistance of the best chalk you have when talking good.
Resistance of same when dried a little.

Have Martin adjust a transmitter for best talking and get two alike to work with

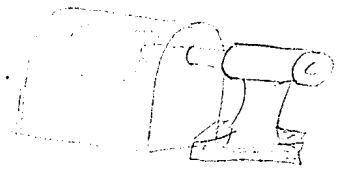
Put rubber between the ring and diaphragm.

Try a thinner diaphragm of same diameter if not good of iron then of rubber, fibre or of slightly stretched

81

T. A. E.
M. N. Forrell
Johnson

Chas Batchelor



80

all night.

T C E
M M Teona
Jennie

Chas Batchelor

in Box No 5 = a 6 - Do not - proceed with the work
would open but very slow

in Box a 6 - No - will open open the pad
hand but good results

82

Chas Satchelor
7 a E
M M Force
Johnson

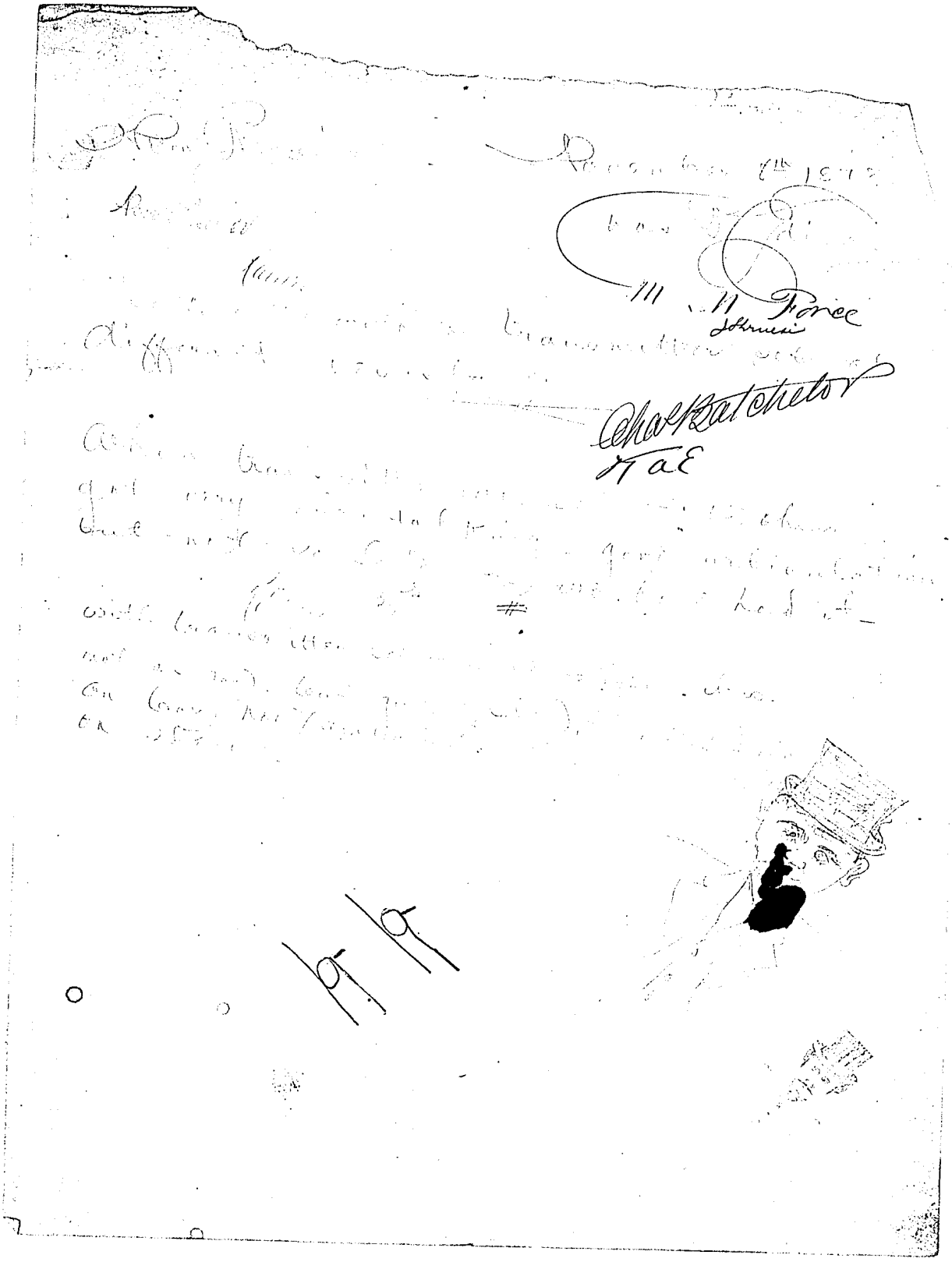
Union County Oregon 8th 1878

Box No 5 containing Button moulded on stand was done this morning with sponge in pan

Box No 4 with cutting pad was the Sow but was not as good as last night

Union County
Now

83



M D Price

Chas Batchelor

Tae

took it a whole back again and it is better but not [illegible]

with the transmitter at 35½ it is not bad for tube instrument when I put [illegible] in diaphragm the talking and articulation is [illegible] best when turned "just as slow as possibly can [illegible] - think this will be good for whole movements, not sound enough for the [illegible] we are using.

85

Pour Receiver — Nov 9th 1878

Chas. P. Edison

M. B. Price Johnson

boxes No 4 and 6 with 6.30 - No 1 - in with Pasteboard in one and small sponge in other have kept constant for three days - having been put in on the 6th inst - and talk very good this morning —

Chas Batchelor

TAE

~~[illegible] with different [illegible]~~

to determine the resistance of the transmitter which gives the best talking on 6.30. No 1 which was put in on 6th inst —

86

New Rochelle

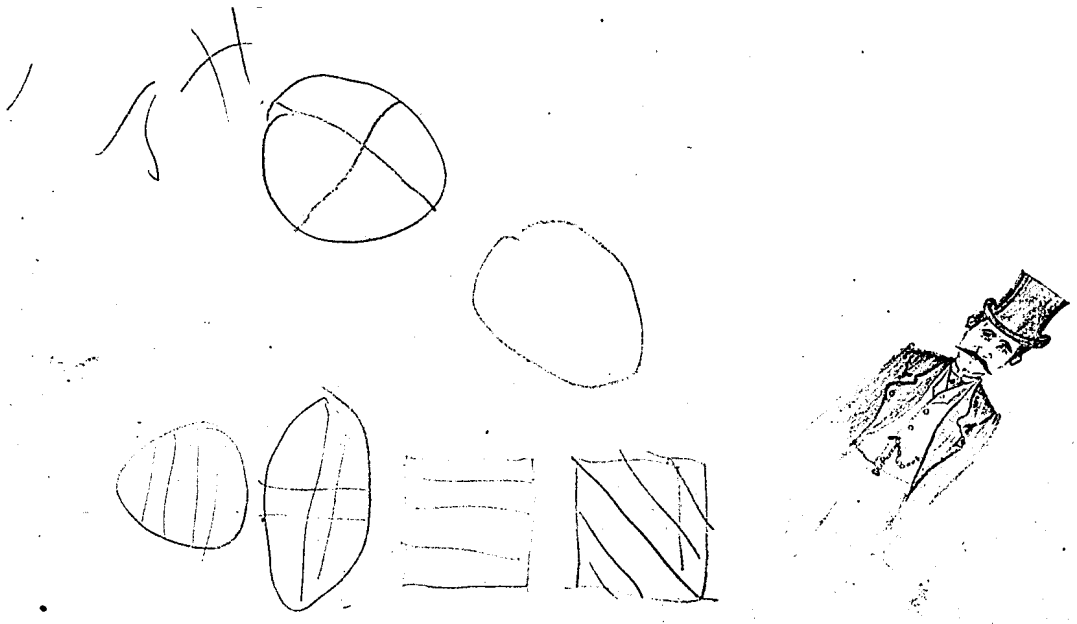
Nov 9th 1878

: Chas Edison
M M. Stone

Did one of the sponges on a b.s. No 1 w.c. it rubbed against and in about two hours it was off with a small piece remained —

— " — Chas Batchelor

T. A. E



New Brunswick

Nov 13th 1878

Chas P Ellison

Experiments with different diaphrams with a 6.30 Nº 1 button –

Hard rubber diaphram does not change the talking very much although think it helps the articulation a little –

Vulcanized fibre – dont see much difference between it and wood –

Cousin – about quarter inch thick is bang up good articulation –

thick mica – is very loud louder than Carbon and wood better articulation than wood and louder than wood – but not as good articulation ~~than~~ as Carbon but for general purposes are desirable –

Wood 1/4 thick – not good results too low and not striking articulation – gives hollow sound –

88

New Haven

Feb. 19th 1870

Chas. P. Gibson

BUTTONS

Black Button of 6.30.1901 - with small amount of glycerine no great change

Button with glycerine instead of water is very foul. Hardly here it - Glycerine did not put any water in Box - large amount of glycerine was used

Button with small quantity of glycerine was fouler than above but was not such a foul smell

[illegible] that [illegible] days and put in box with [illegible] and it [illegible] but seemed to have only a little [illegible] on outside and [illegible] and - have to put in to see if it will come up again -

Have taken water out of the other two boxes to see if is not too much dampness instead of not enough

[illegible] and in the two boxes they got worse and got quite bad. Put little water on the button and quite [illegible] gas in box and whenever was very good

89

Saw Receiver — November 13th 1878

Thos. A. Edison

Diaphram

Zinc Diaphram about 1/8 thick is no good
very low —

Thin Mica Diaphram works very good not much
difference between that and thicker — Sir,

Saw Receiver — November 14th 1878

Thos. A. Edison

Put box no 6 and shellacked both in and outside to see if it will keep battery from getting dry —

[illegible] wants to be dry on the inside and slightly

Put [illegible] in a battery in box no 6
it gave very fine talking when put in
and [illegible] — [illegible] to see
if it will keep dry —

90

"Bug Pie" "double breasted Bug"

Bug Bug Bug Bug

Bug Bug

dont want good this morning – Bug Heap Bug

Heapee Bugee

Bug to Elephantus

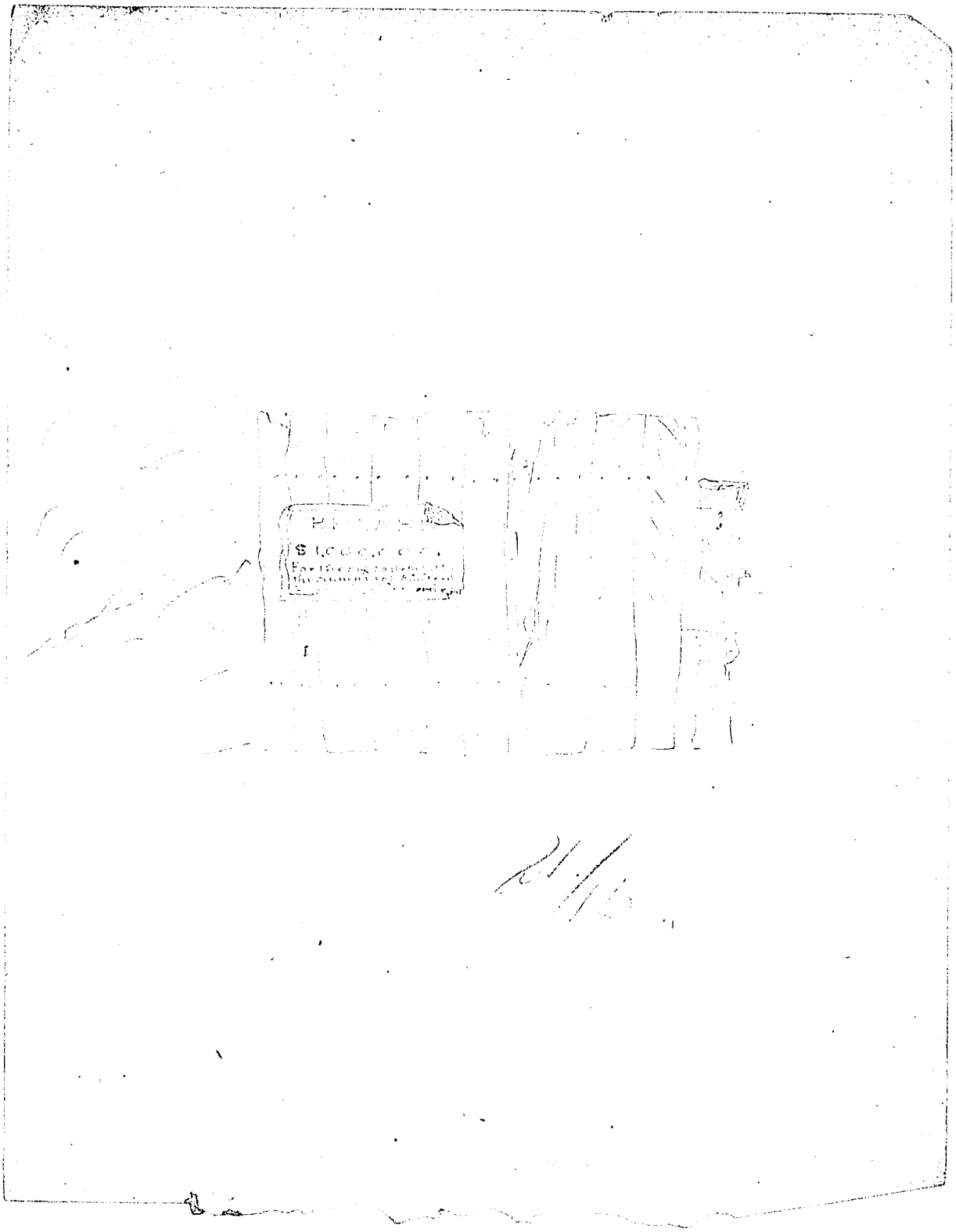
[illegible]

[illegible] box [illegible] for [illegible]

[illegible]

Colonel.

(R) [illegible] the other transmitter and [illegible] "[illegible] Bug upon the [illegible] and not fix the buttons getting [illegible] out in transmitter



New Receiver

Rad 15th 1878

Reminiscenphone
Khrumdruphn
Canumdrum

Chas. F. Sivan

Have been testing transmitters today and find the sudden decrease in the volume of sound is caused by the adjustment of transmitter. ~~when~~ I took transmitter when could get but very low talking and changed adjustment until it came good again and it stood that way for half an hour when it suddenly went very low and I adjusted transmitter again and it stood bang up again. ~~[illegible]~~ think it is a cracked in diaphram - have kept it for new diaphram

☆ $1000,000

a $100,000 in my mind

[illegible] in [illegible] end

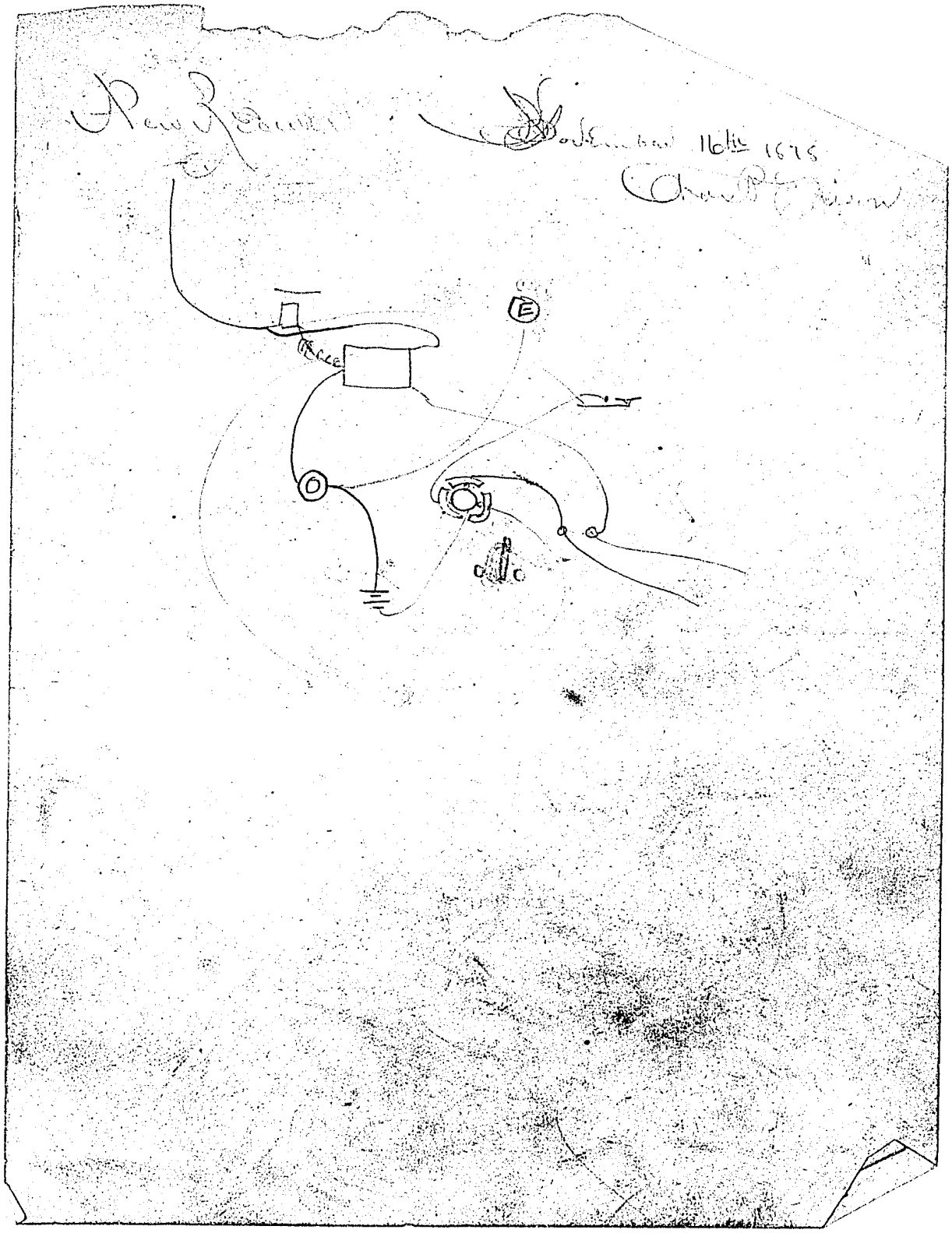
and got a splendid speaking - not quite as loud as when one is in singing

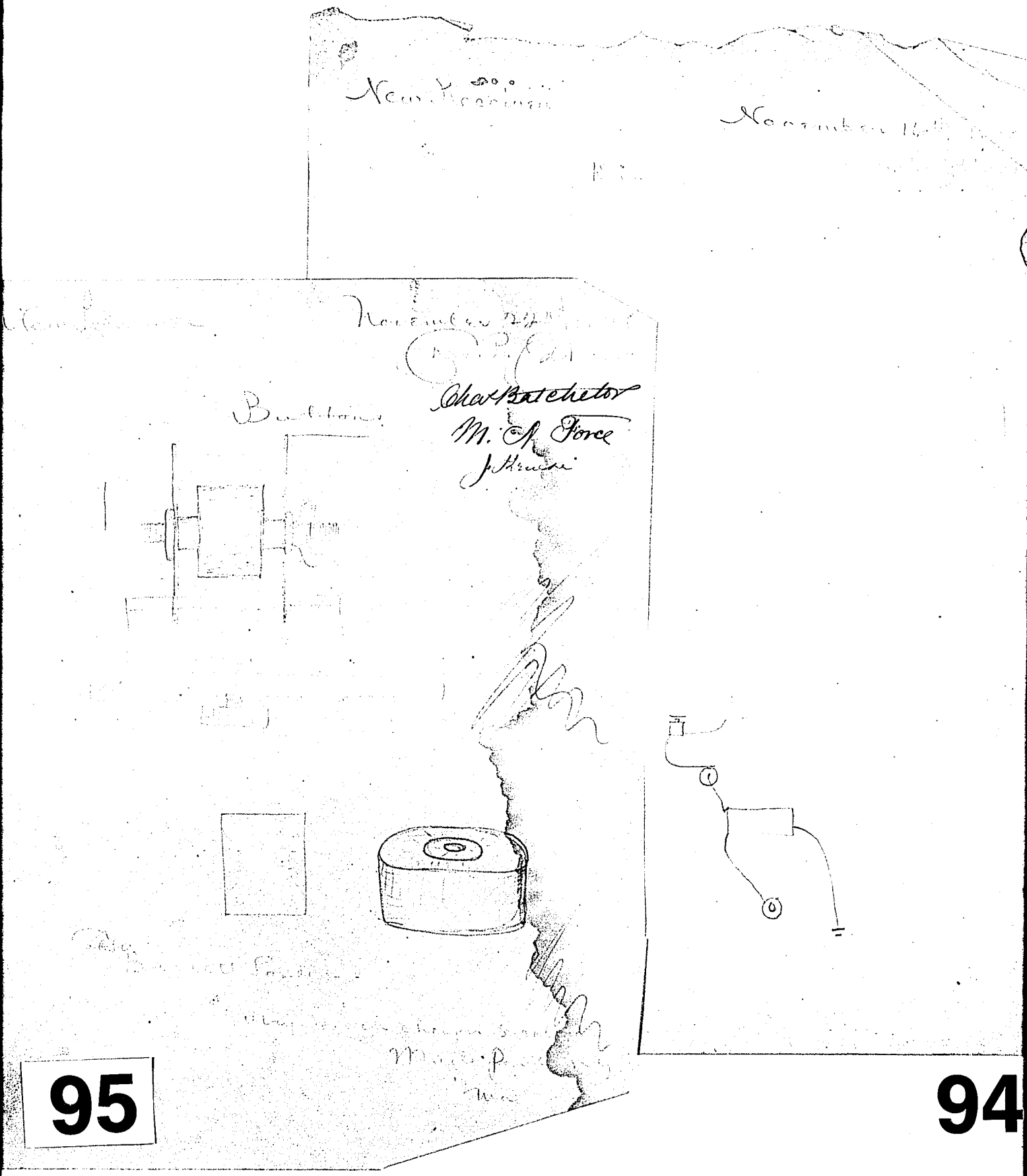
Motion quite came move from [illegible] in box - and suggest friction [illegible]

a $100,000 in my mind

$1.000,000 REWARD

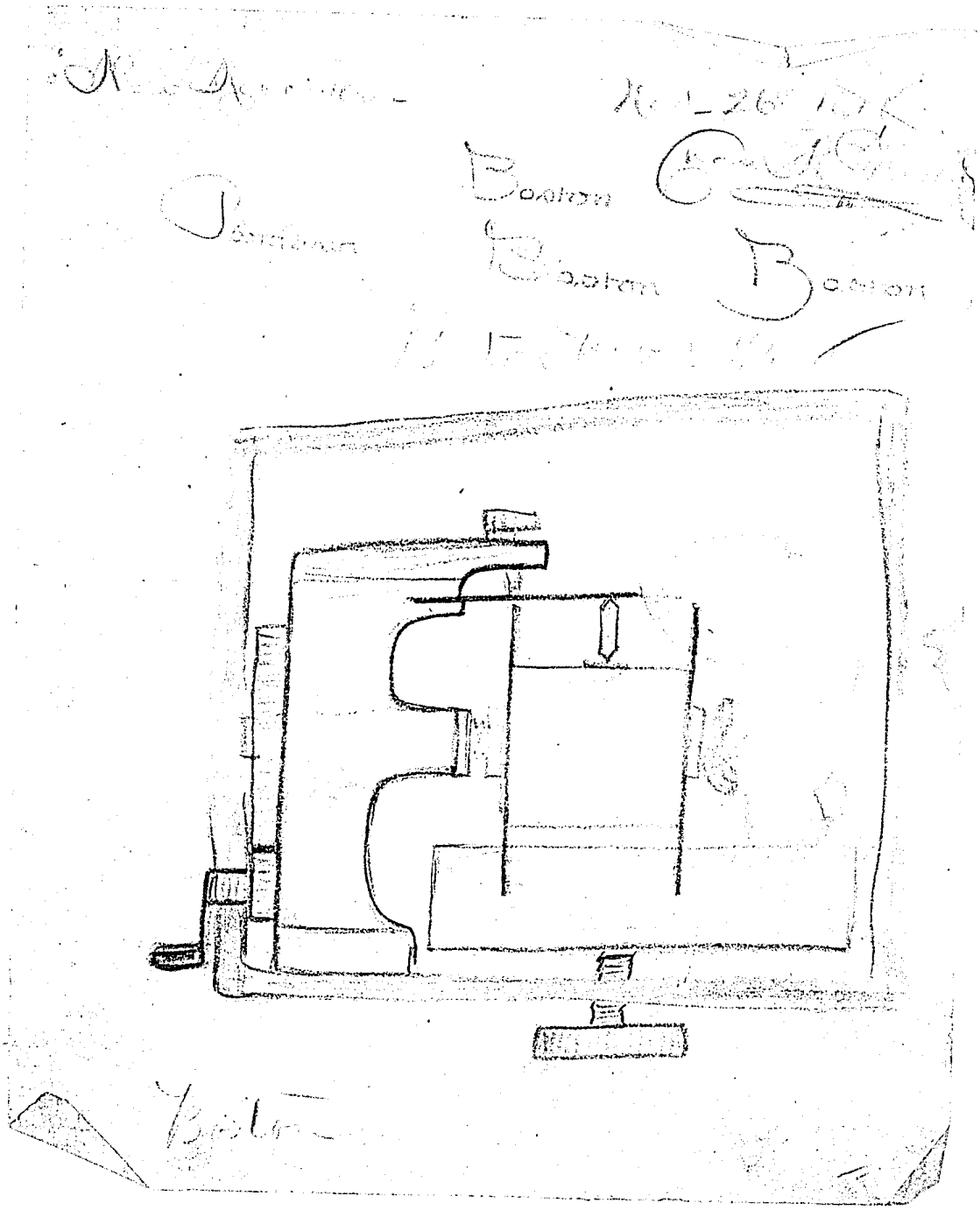
92


E



95

94

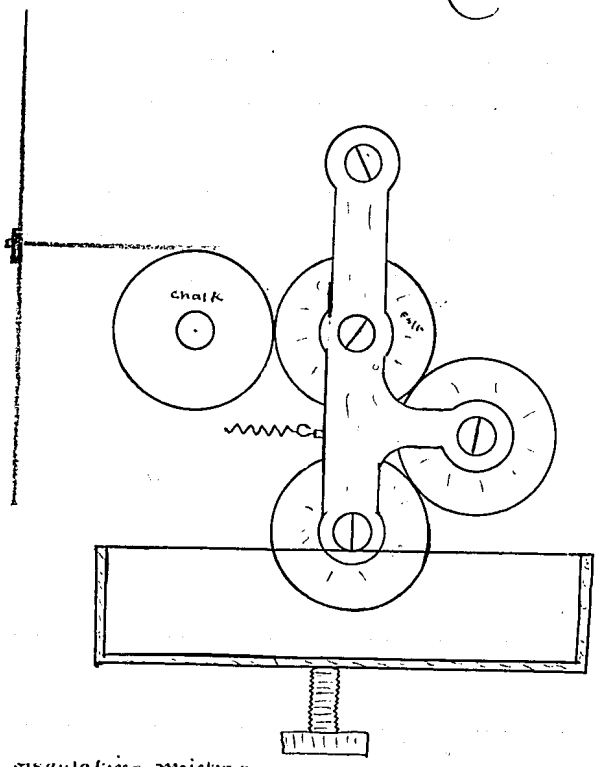

Bottom
Bottom
Bottom
Bottom

T. A. EDISON.

Menlo Park, N. J., 187

New Receiver Nov 28th 1878

Thos A. Edison



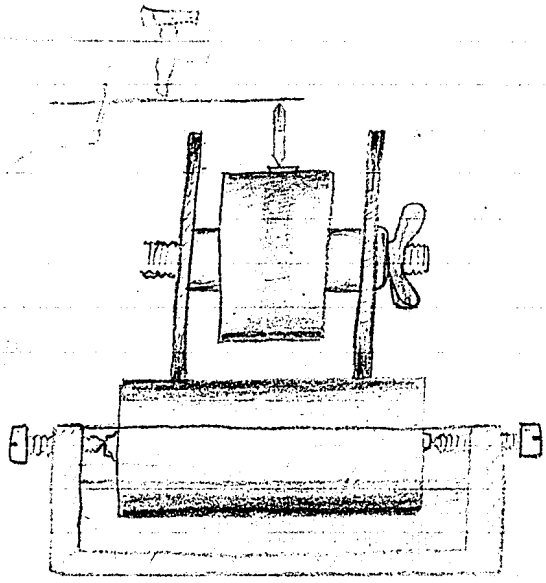
for regulating moisture of Button

T. A. EDISON.

New Receiver Nov 28th 1878

Menlo Park, N. J., 187

Thos A. Edison



felt roller feeds water on Phonetic Paris discs.

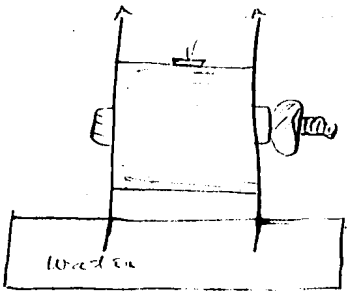
97

98

T. A. EDISON.

Menlo Park, N. J., 187

Receiver. Dec 2nd '78
Thos A Edison



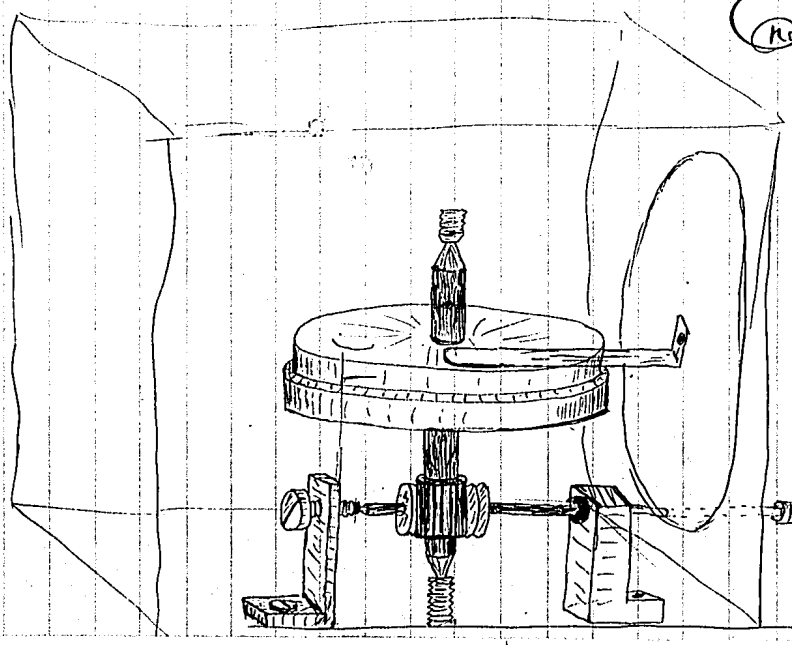
~~Rec~~ Blowing and stirring A.A.
revolving in water —
too much Water supplied.

99

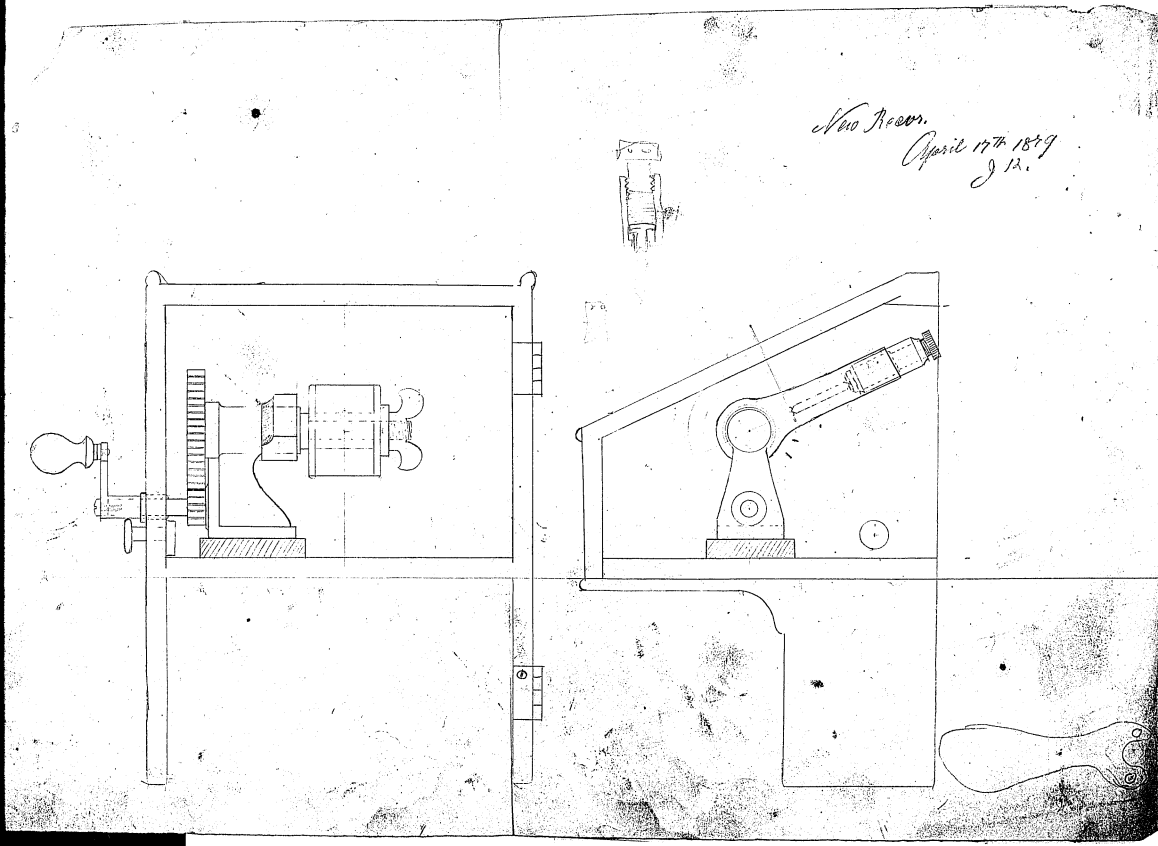
New Receiver Dec 16th 1878
Thos. A. Edison

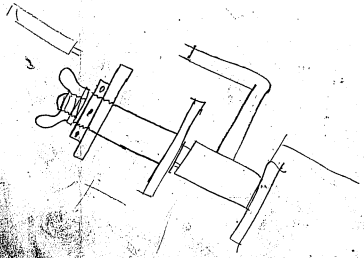
T. A. EDISON.

Menlo Park, N. J., 187



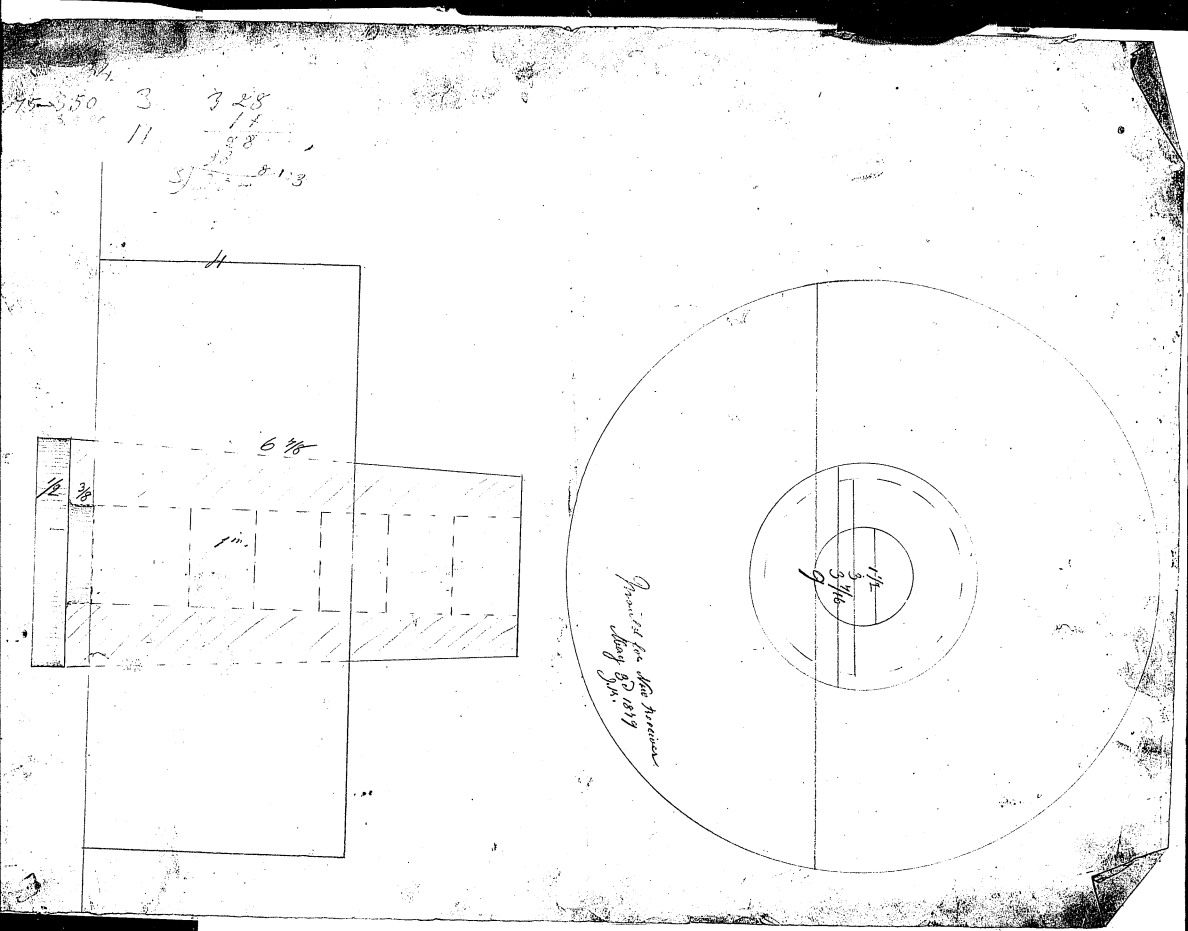
100

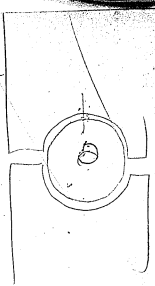

New Haven.
April 17th 1879
J. R.



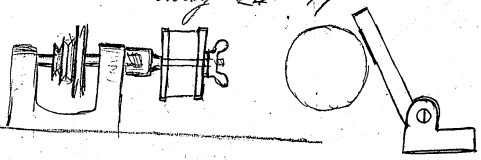
101
18

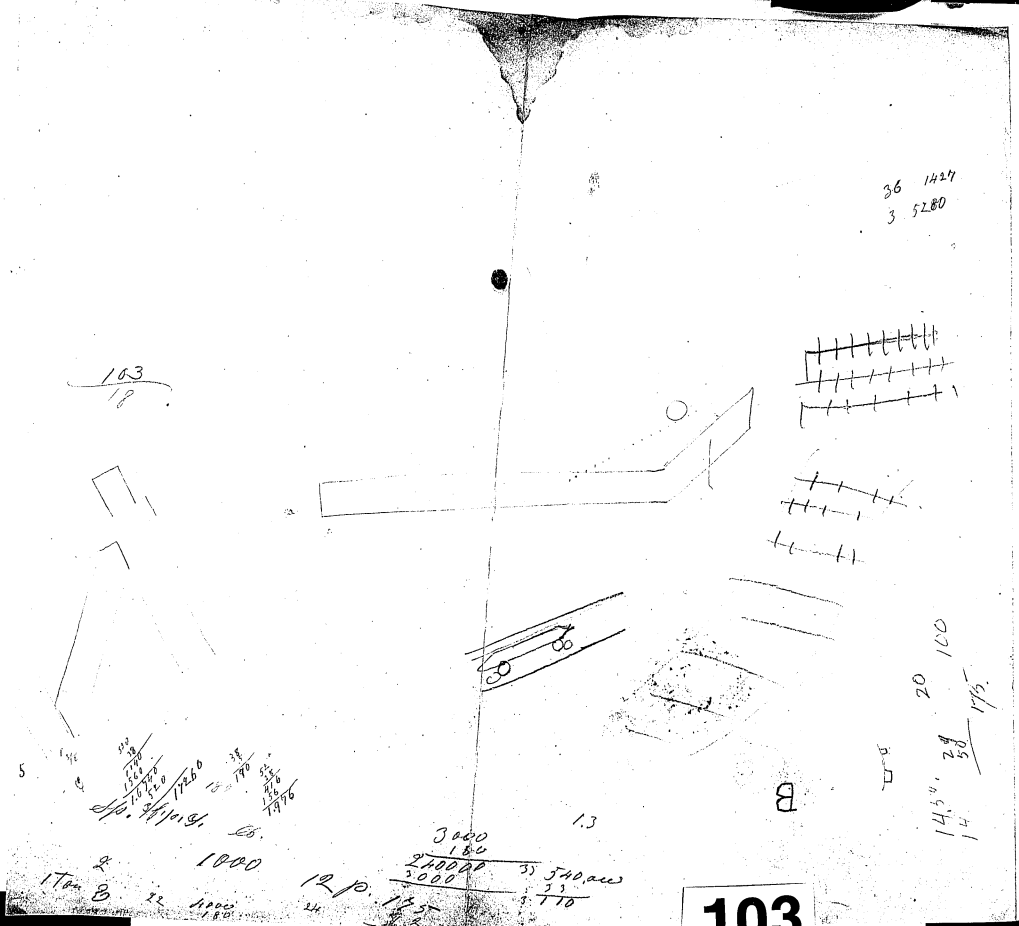
Off Hook Telephone


6 3/16
1/2
3/8
1 in.
1 1/2
3 1/16
9
Patented for the Wm. Arnison
Albany Co. N.Y. 1849



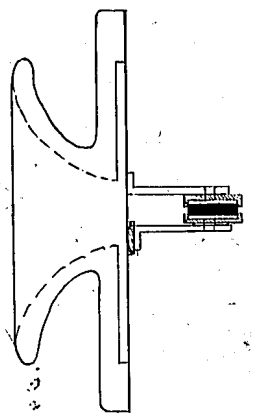
New R. Telegph.
Albany 24th 49



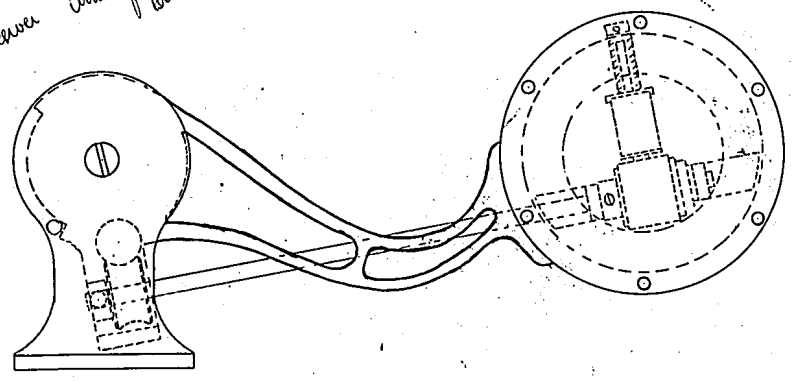


No. 208.

Transmitter for Patent Office model July 12th 1879



Receiver Arm for P.O. Model for Bell's telephone



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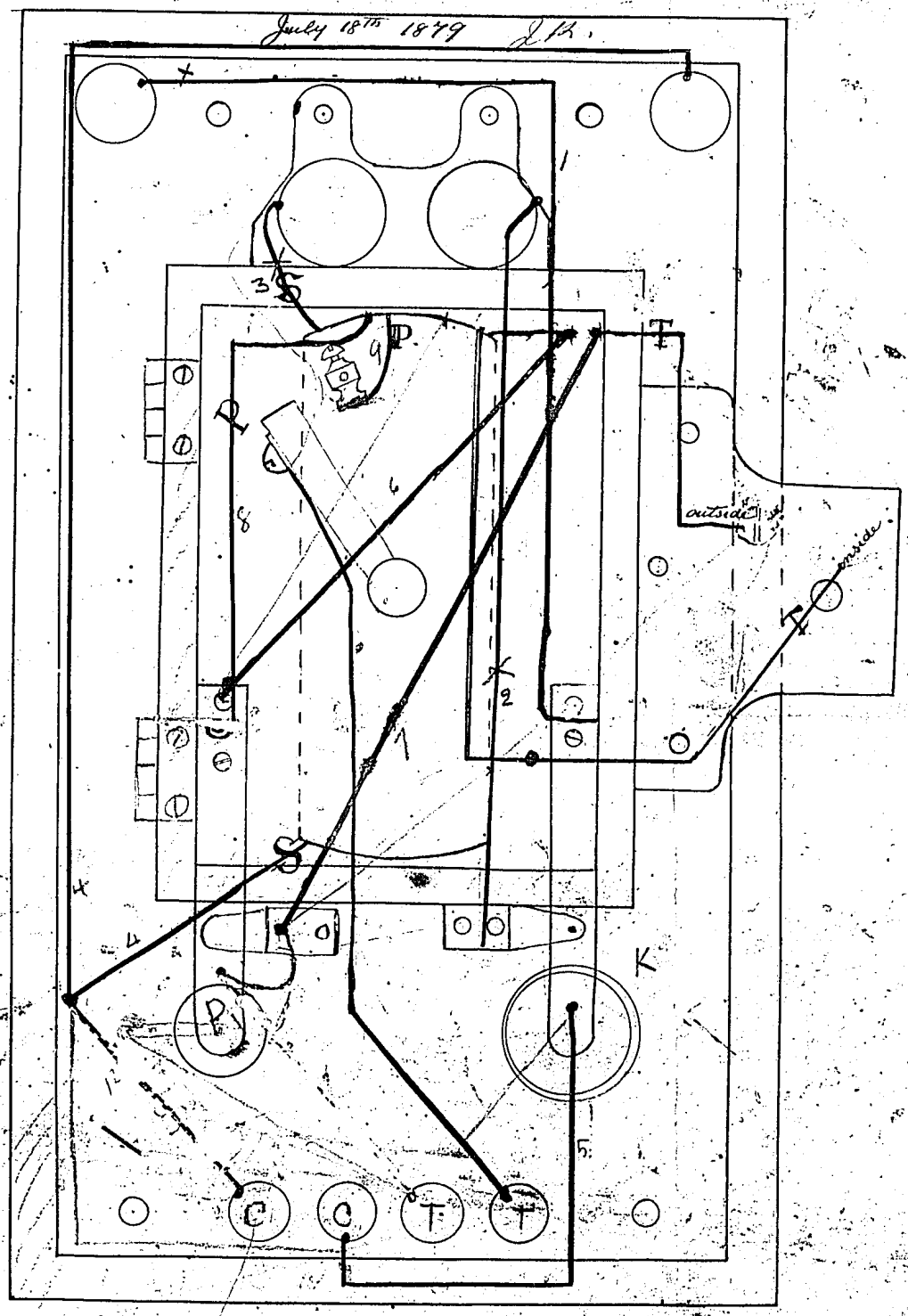
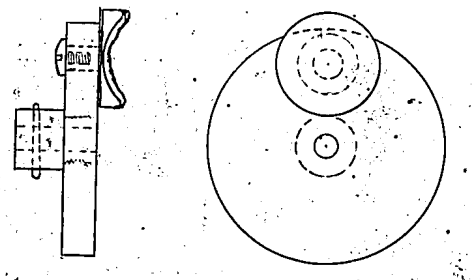


105

July 21. 1879
J.B.

NEW RECVR. TELEPHONE

4 like this



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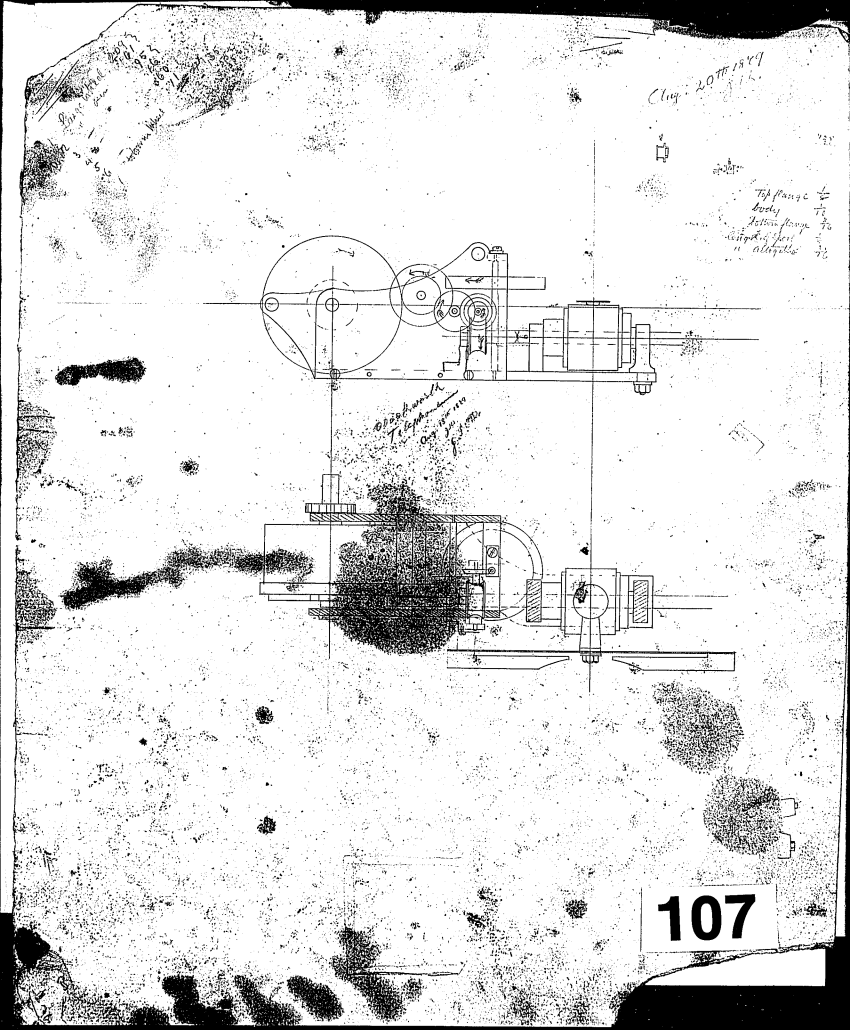

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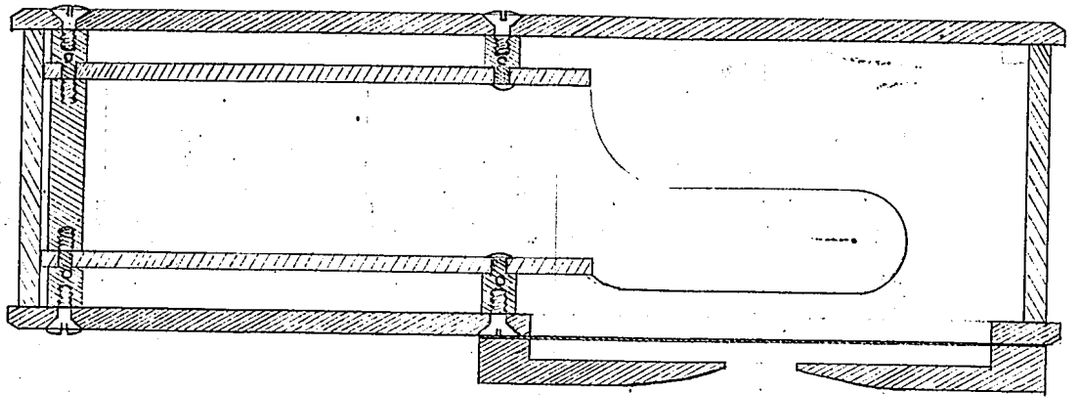
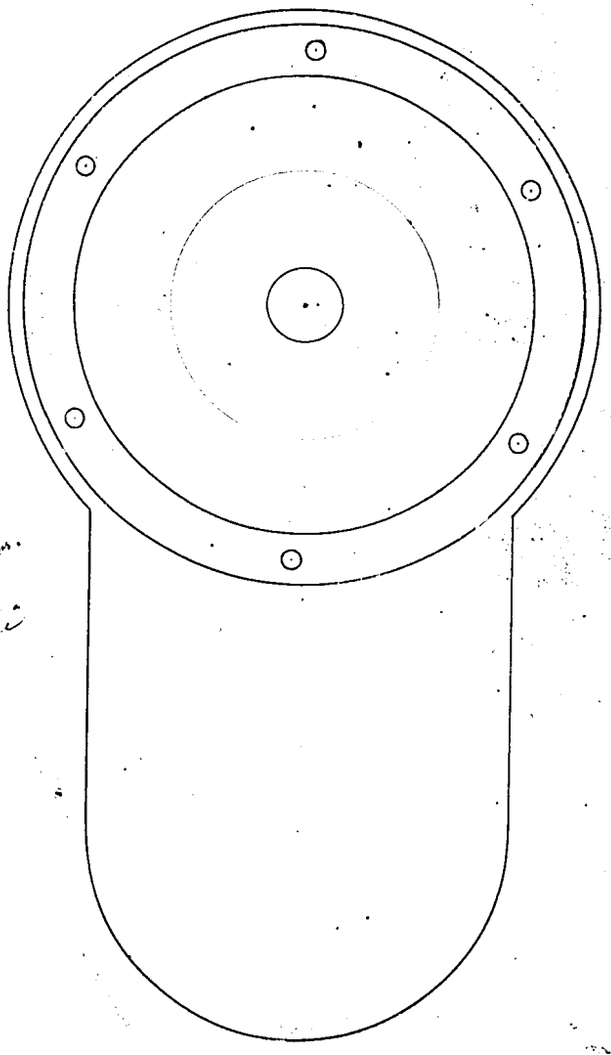
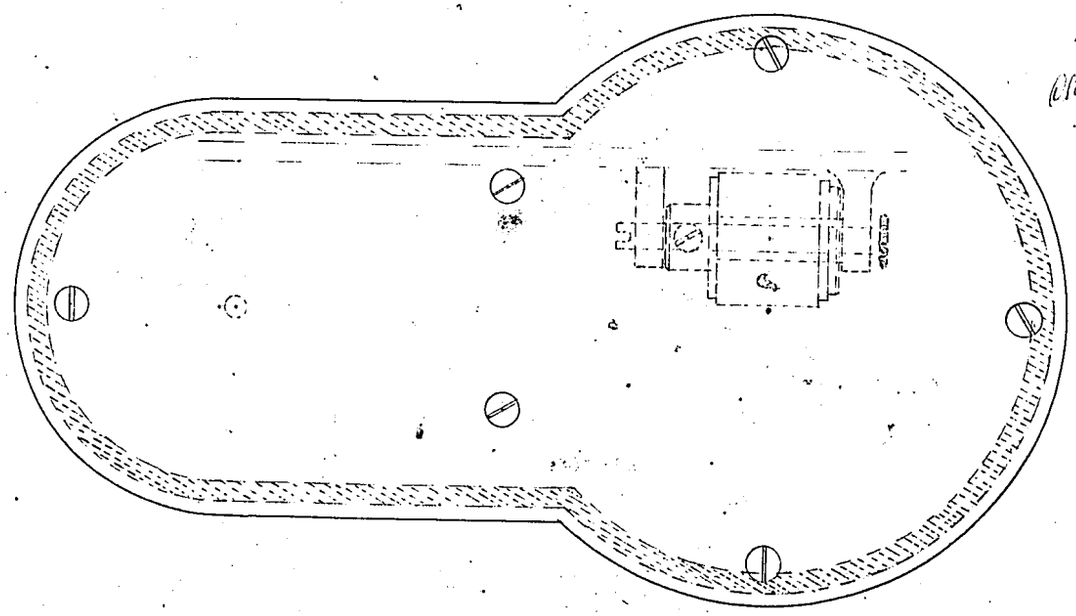




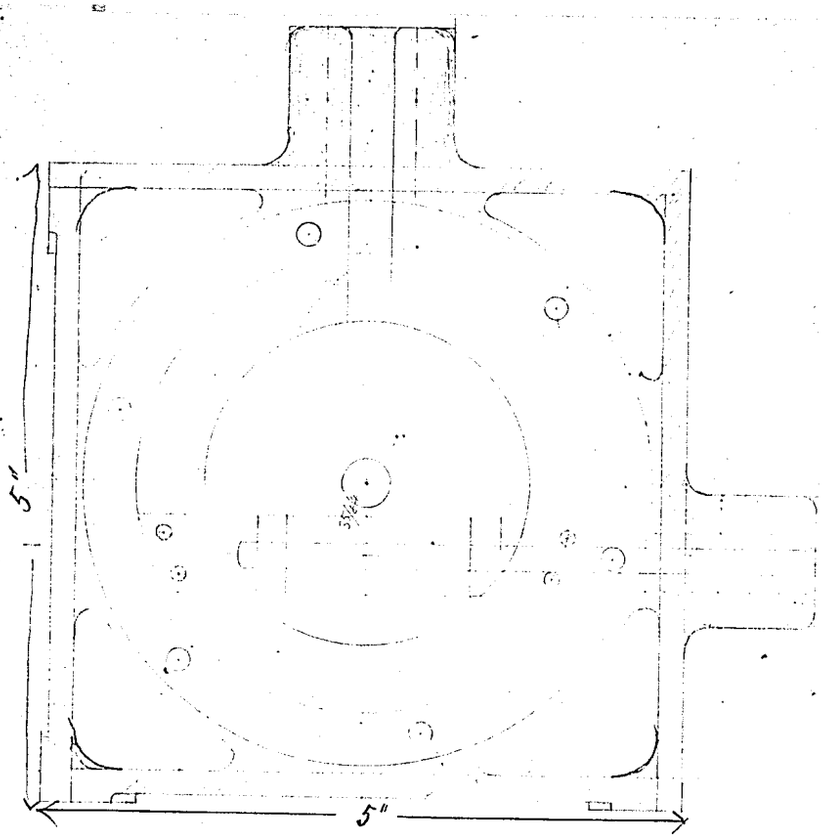


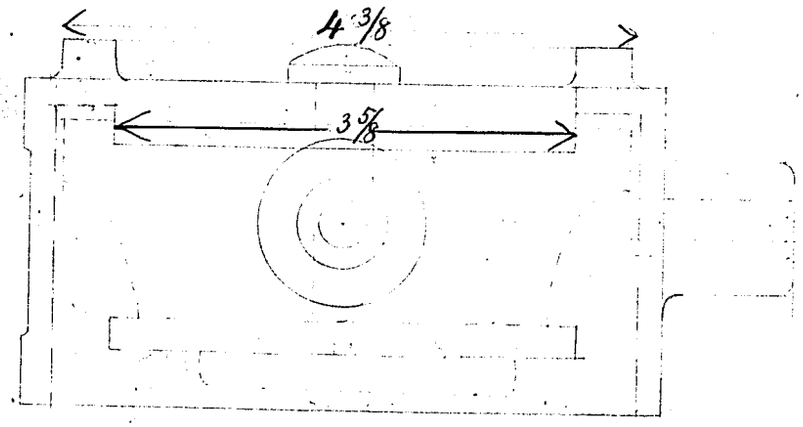
Clockwork Accr.

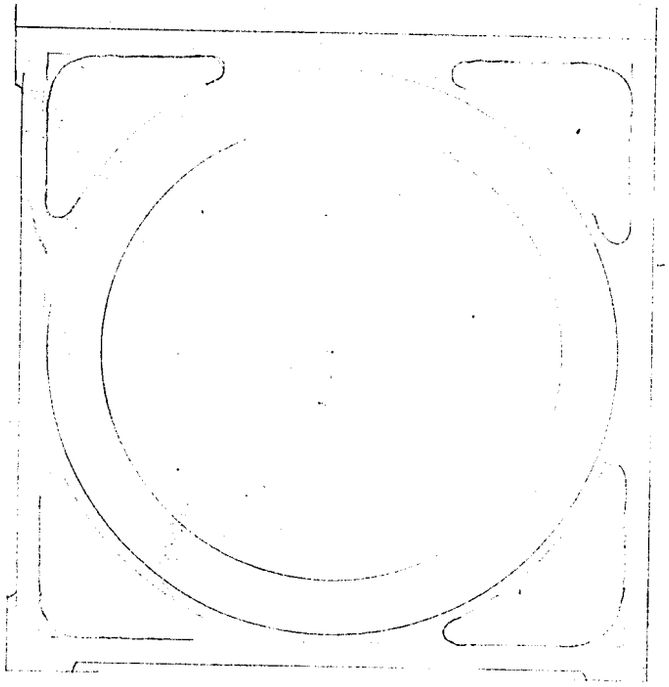
J. Mercer

Edison's
Laboratory
Menlo Park N.J.
August 20th 1879.
S. O. Mott, D
—"—
John F. Ott

108







Figs. pattern sizes

New Boxes. Telephone

J. Krumeich

Sept 79

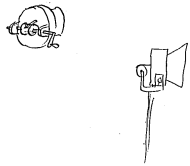
41/601

109/18

109

[ON VERSO:] "New Receiver"

110



Prescott

New Receiver

Chas Batchelor

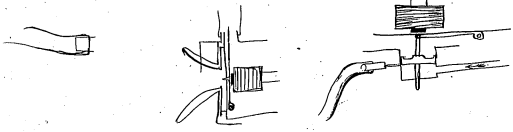
T A Edison

J Howard

J Martin

Witness

C E Carman



Personally appeared before me this day of 19 , Chas. Batchelor, John Howard, and John Martin, and acknowledged the above to be their signature.

Notary Public.

[ON VERSO:] "To hand Apr 20, 1880 Wm Carman"

111

Copied on page 98 Vol 4 Edison Receivers Oct 8. 1880.

W Carman

[ON VERSO:] "To hand April 20, 1880 Wm Carman"

Telephone Receiver — Chas B Edison / T A E
J Krueger
W M Force

Experiment to find out whether No 3 or 4 solution of Caustic Soda is best for the Chalks

No 3 is 20 dwts Caustic Soda + 2 ℔ H_2O
No 4 is 10 " " " " " "

— 3 grains Acet Mercury 30 of No 4 Chas Batchelor
— Started off good but played right out

— 42 grs Acet. Hg 40 No 3 —
— No good. —

— 6 grs Acet Hg 40 No 3 —
— No good busted

— 24 Hg — 30 — No 4
Clear, good, but too low

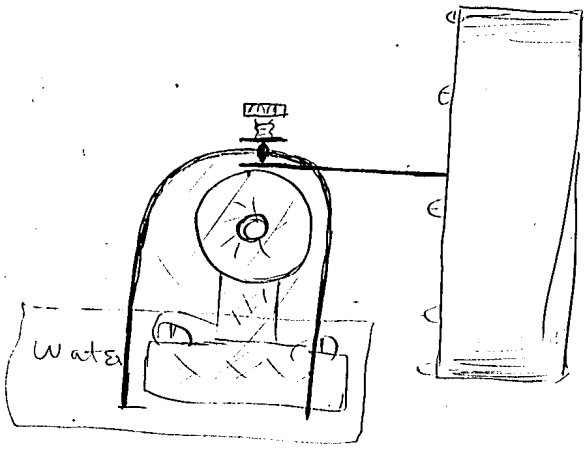
— 18 Hg — 40 No 3
— loud but no articulation

— 6 Hg — 30 No 4
very loud indeed (busted)

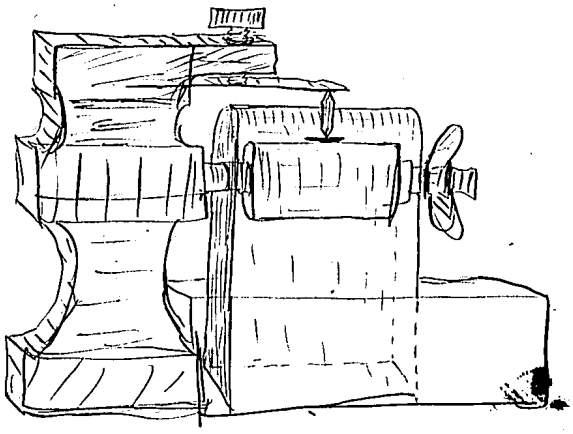
— 18 Hg — 30 No 3 —
— pretty loud fair articulation but it busted

112

[ON VERSO:] "To hand April 20, 1880 Wm Carman"



T A E
Chas Batchelor
Johnson
M M Tooker
Thos A Edison



T. A. EDISON.

Menlo Park, N. J., 18

chips of wood take too much water –

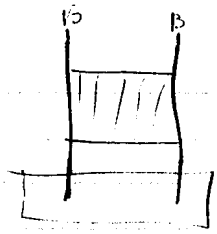
[ON VERSO:] "Came to hand again Apr 20, 1880 Wm Carman"

113

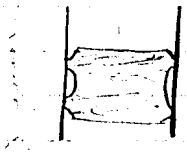
114

T. A. EDISON.

Menlo Park, N. J., 187



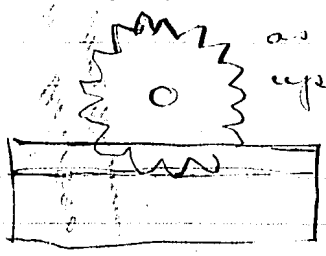
thin plaster paris discs gives too much water



plaster paris discs with button cut this way on Ends too much water

Same as above with only one disc in water is better

disc cut this way is better as it does not take up so much

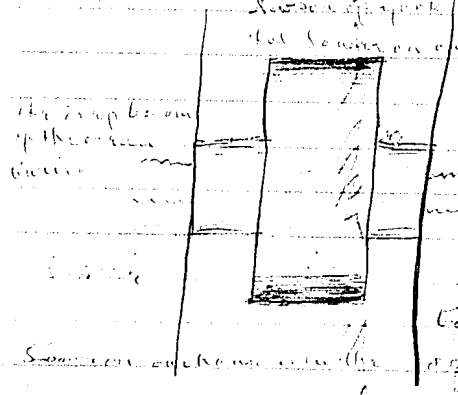


[ON VERSO:] "Came to hand Apr 20, 1880 Wm Carman"

115

T. A. EDISON.

Menlo Park, N. J., 187

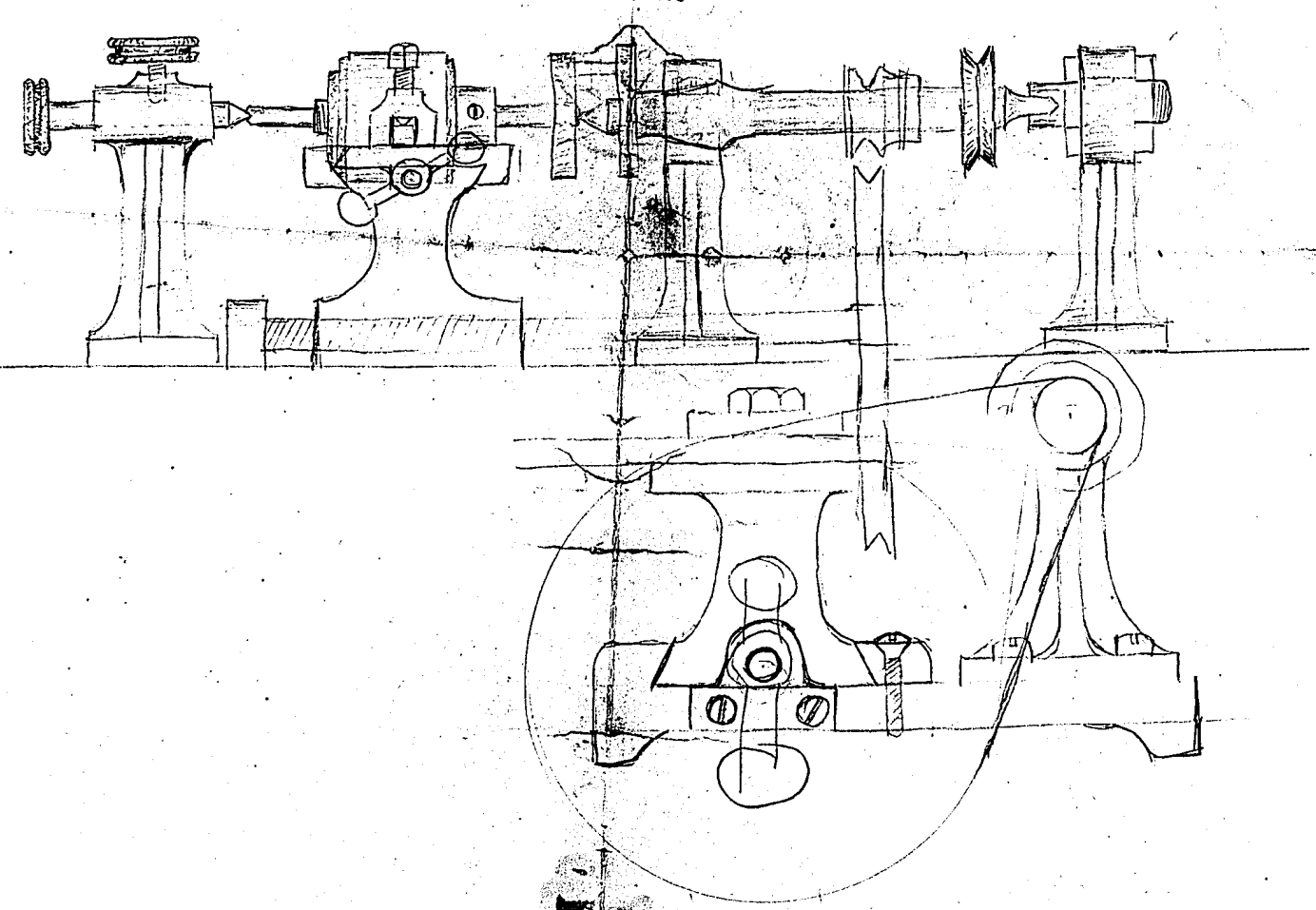


Chas Batchelor
M. N. Force
J. Kruesi

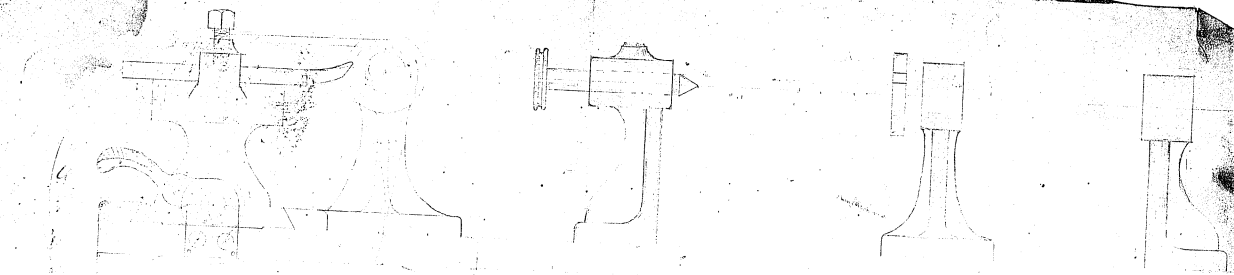
[ON VERSO:] "To hand Apr 20, 1880 Wm Carman"

116

Charles Telephone
JK



117



Chalk Telephone

4X3 15

23/4

New Receiver —

Chas. P. Edison
J. Ademsi
M. M. Foster

18 Acet. Merc. 50 Soda Solution No 2
Good. too soft. pretty heavy pressure for good talking

No 2 Solution is 2½ pennywts. Caustic Soda 20 of H_2O
No 1 " " 5 " " " 20 of H_2O

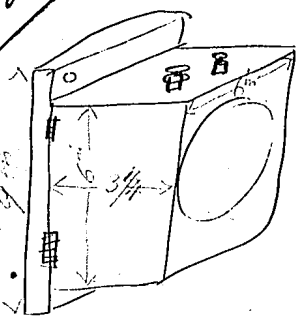
36 Acetate Mer. 30 Soda Solution — low — T A E
12 " " 20 " " low
24 " " 60 " " low
6 40 " " low — good as any
6 30 " " low
18 60 " " low — N.G.
18 30 " " N.G. — very low
24 30 " " " low
36 20 is very good but the diaphragm makes so much noise that it cant be understood
3 30 good at first but plays out —
36 " " 40. good, loud not much pressure on
42 " " 20 squeaks, low. put on thick diaph.
30 40 loud but poor articulation
36 " " 40 loud, good articulation. light pressure
18 40 loud. wants a stiffer diaphragms
3 " " 20 loud, very good. wants a thicker diaph. very little pressure. follow this up.
18 " " 20 very good. very little pressure.
3 " " 20 just as good as other 3.20
42 " 40 no good loud but rattles too much, try it with thicker diaph.

See over

119

Mr Kruesi

Make 6 of the boxes that are for trying the chalks as receivers.



Hinge the boxes like sketch & only put inside the receiver with two brass pins on top. I shall want to put them up on the wall side by side

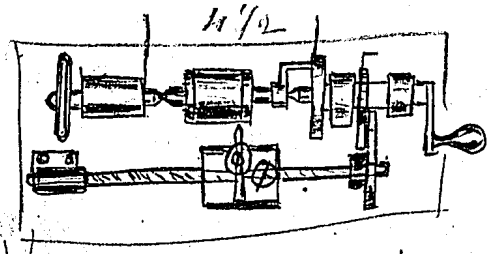
E B

J Kruesi
M in Force

Came to hand Apr 1881
Mr Edison

121

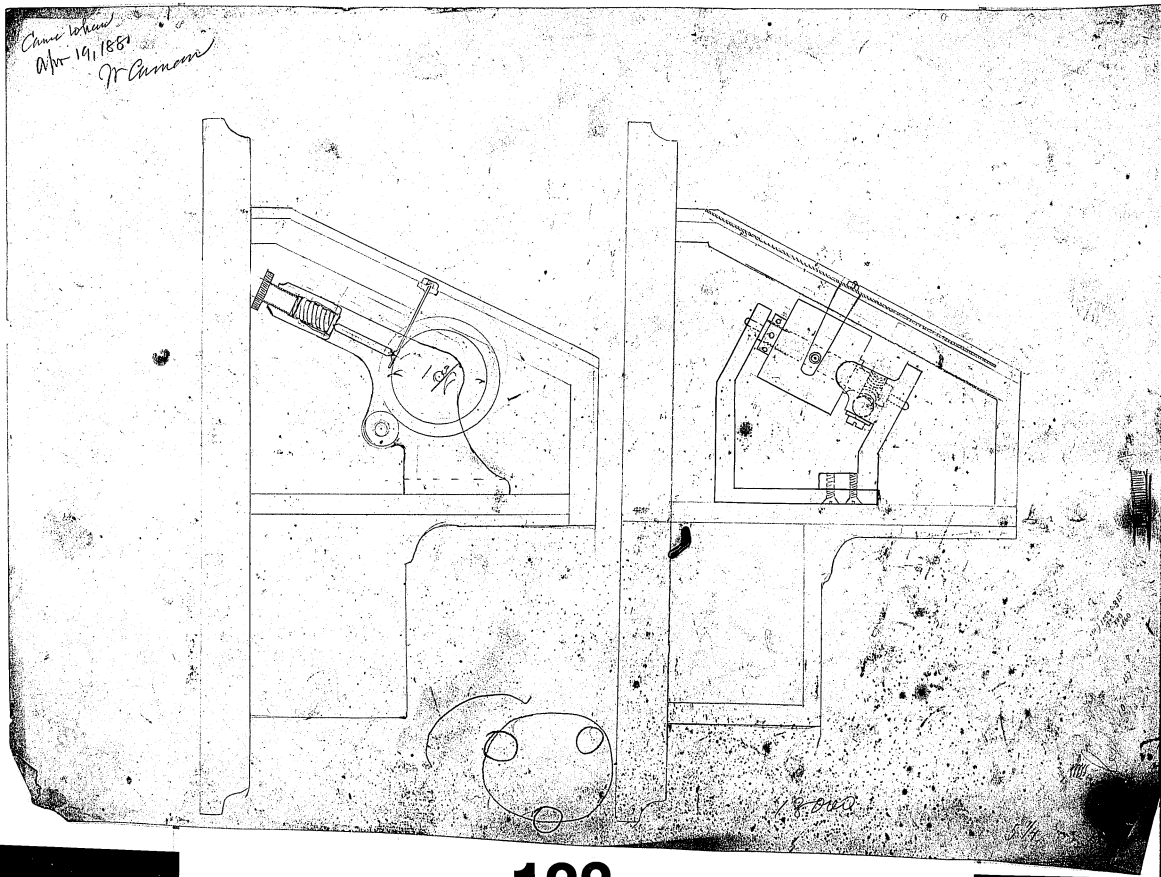
Came to me 11/1 1880

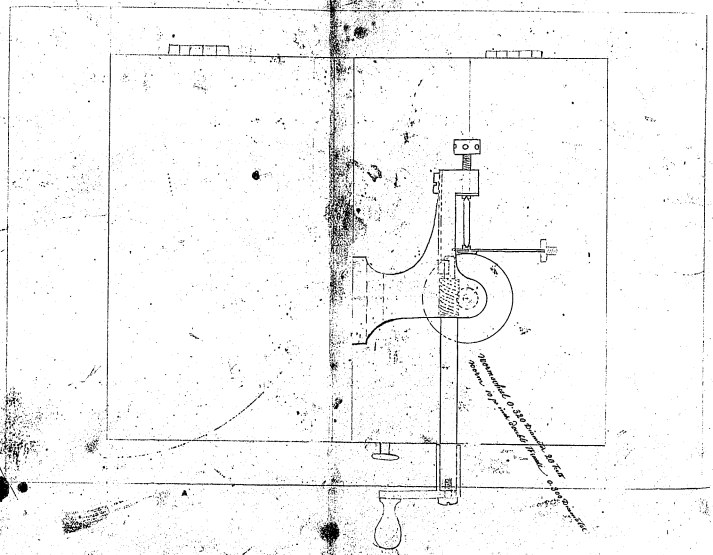


Kruesi will you design a cheap little lathe for Johnson to turn the chalks off the top — to turn by hand. both heads stationary. With large pulley on one end of mandrel to ~~turn~~ put the tool to

120

Came to hand
Apr 19, 1881
J. Cannon



Came to hand Apr 19, 1850
W Cannan

Mr Bennett